Detergent Anniversary Issue

September, 1958

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SOAP and CHEMICAL SPECIALTIES

On this issue...

Dreft", first U. S. household detergent led the way . . . 47

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New aerosol filling method combines cold, pressure . . 89

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Unusually beautiful view of Procter & Gamble's largest synthetic detergent plant at St. Bernard, O. This year marks 25th anniversary of first U. S. household detergent. "Dreft," P&G's pioneer product in the field.

It stands apart...

Essentially for you

D&O
ESTABLISHED 1798

Our 159th Year of Service

flavor bases
dry soluble seasonings
essential oils
aromatic chemicals
perfume bases

because its color is the most brilliant, its texture the richest, its form the most perfect. Even among the rare and the beautiful, one always stands apart, expressing in nature's own language life's unending search for the ultimate. Vibrant, lovely, diversely fragrant and alive, flowers represent the primal perfume, the poet's joy, the lover's offering. Yet even in these favorite children of nature, some are more perfect than others . . . and like a D&O perfume, will always stand apart. In a room filled with the myriad scents of a dozen rare fragrances, one, like the finest flower, will command the field. That one will be D&O!

Technical assistance available on your premises.

DODGE & OLCOTT, INC.

180 Varick Street, New York 14, N. Y.

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PILOT HD-90
DETERGENT FLAKE

MORE SUDS FOR YOUR MONEY

HD-90 helps you to build more suds into your detergent products than any other material at a competitive price. And more sudsing power means greater consumer acceptance.

HD-90 works fine even in hot, humid weather: all-weather protection to keep production rolling along in high gear. All-weather protection for your products, too.

HD-90 is purer—contains more active ingredient and less sulfate—it's hardworking, yet odorless and whiter in color. HD-90 is dust-free and dry flowing.

The uniqueness of Pilot's new standard of purity is in the *Cold Processing:* eliminated are the undesirable characteristics; built in are the cleansing and foaming character.

HD-90 has greater versatility as a result of its higher concentration, an advantage in formulating: *Automotive Cleaners, Dishwashing Compounds, Household Cleaners, Steam Cleaners, Bubble Baths, etc.*

For products with the highest sudsing and cleansing power for your money—investigate Pilot HD-90. Packed in polyethylene-lined fibre drums and 5-ply paper bags. Formulas and samples yours for the asking. Write:

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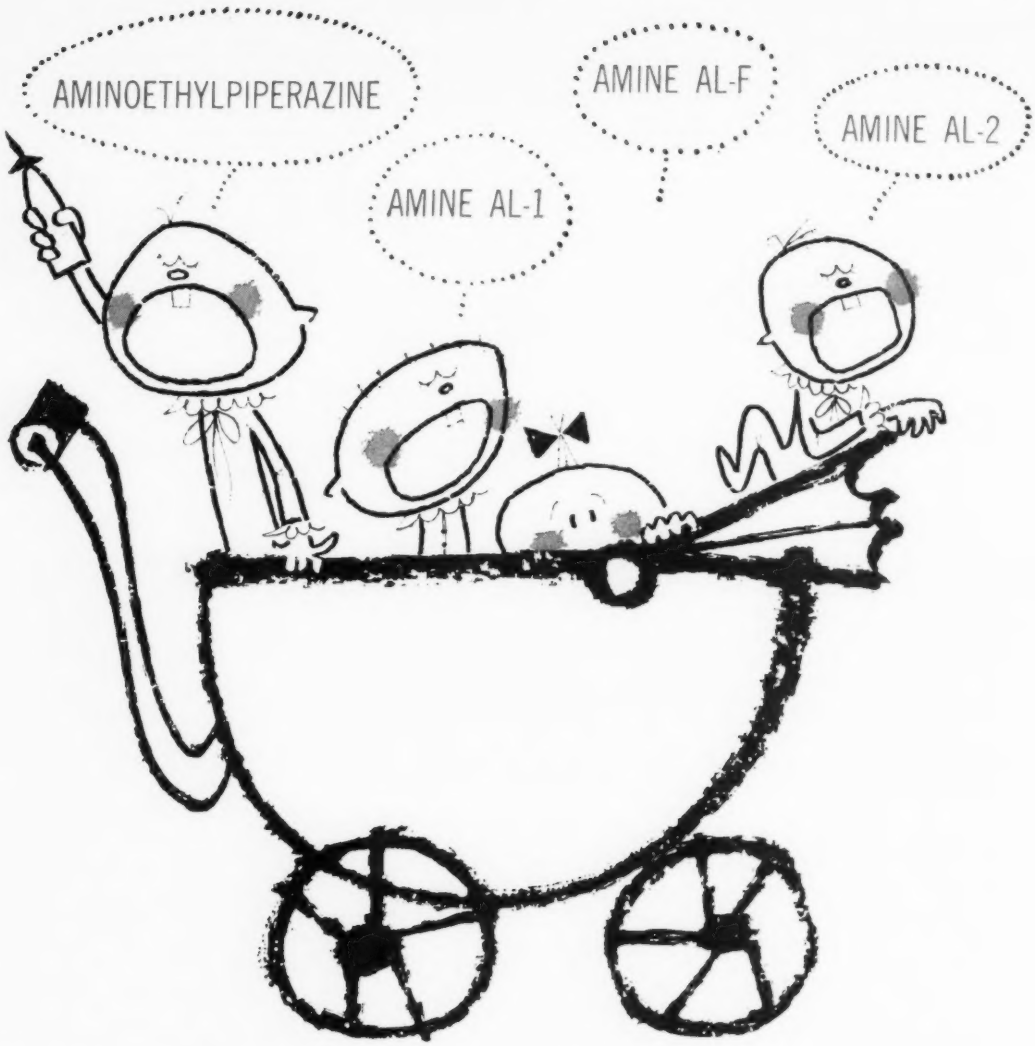

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AMINOETHYLPIPERAZINE—a high-boiling triamine combining a primary, a secondary, and a tertiary amine group in a single molecule.

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We have found some very interesting applications for these Polyamines

Epoxy curing agents—these polyamines, containing the piperazine nucleus, impart good flexibility and high impact strength to the resin; excellent castings, laminates, and surface coatings are obtained.

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Corrosion inhibitors – Asphalt anti-stripping agents – Surfactants – Emulsion breakers –

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These polyamines are available from Jefferson in 55-gallon drums and tank cars. Technical bulletins and samples are available upon request. **Jefferson Chemical Company, Inc., 1121 Walker Avenue, Houston 2, Texas.**

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Essential Chemicals From Hydrocarbon Sources

Volume XXXIV, No. 9 September, 1958

SOAP and CHEMICAL SPECIALTIES

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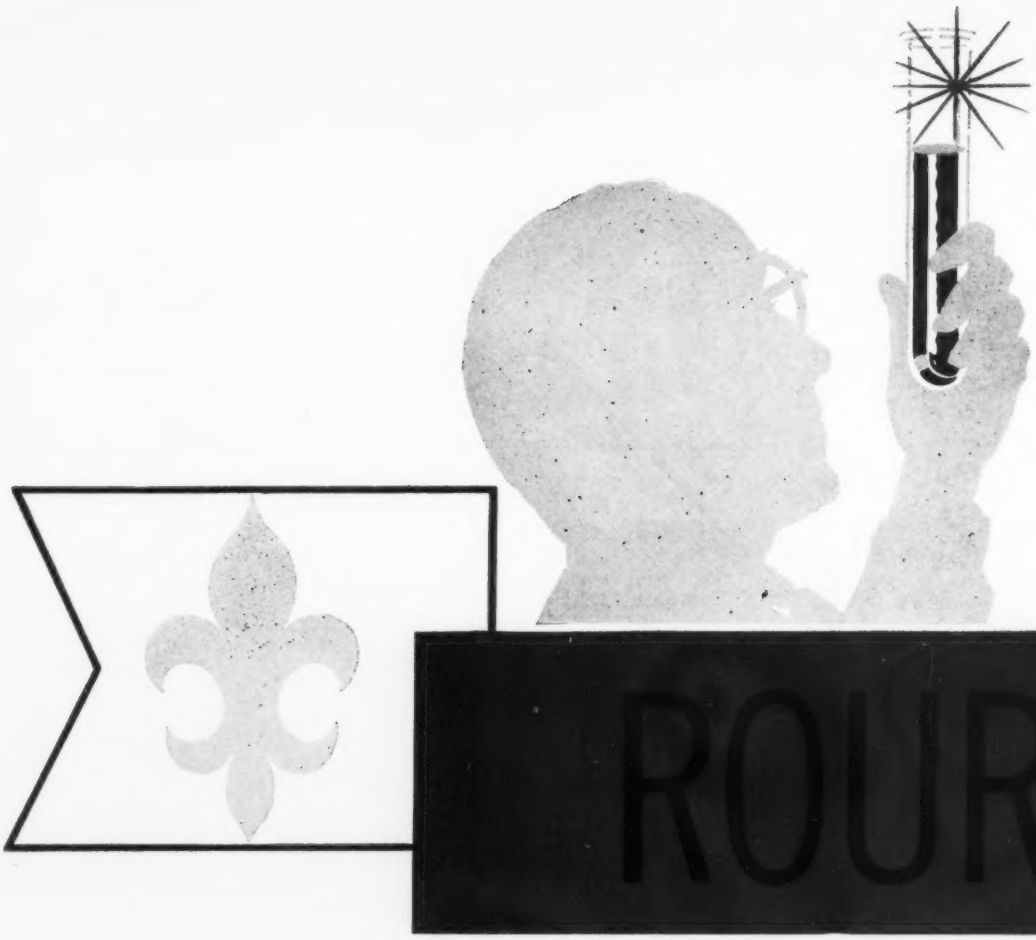

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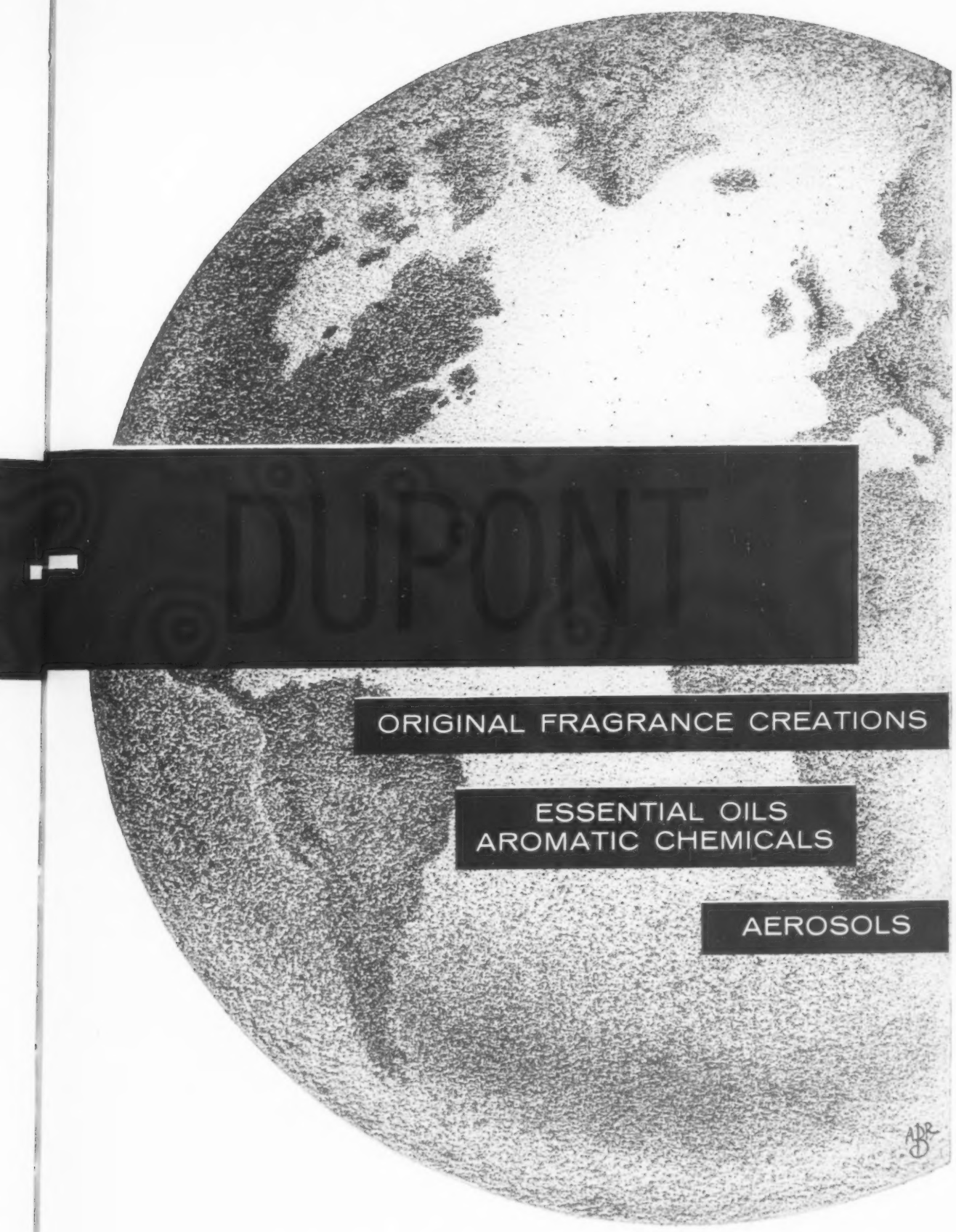
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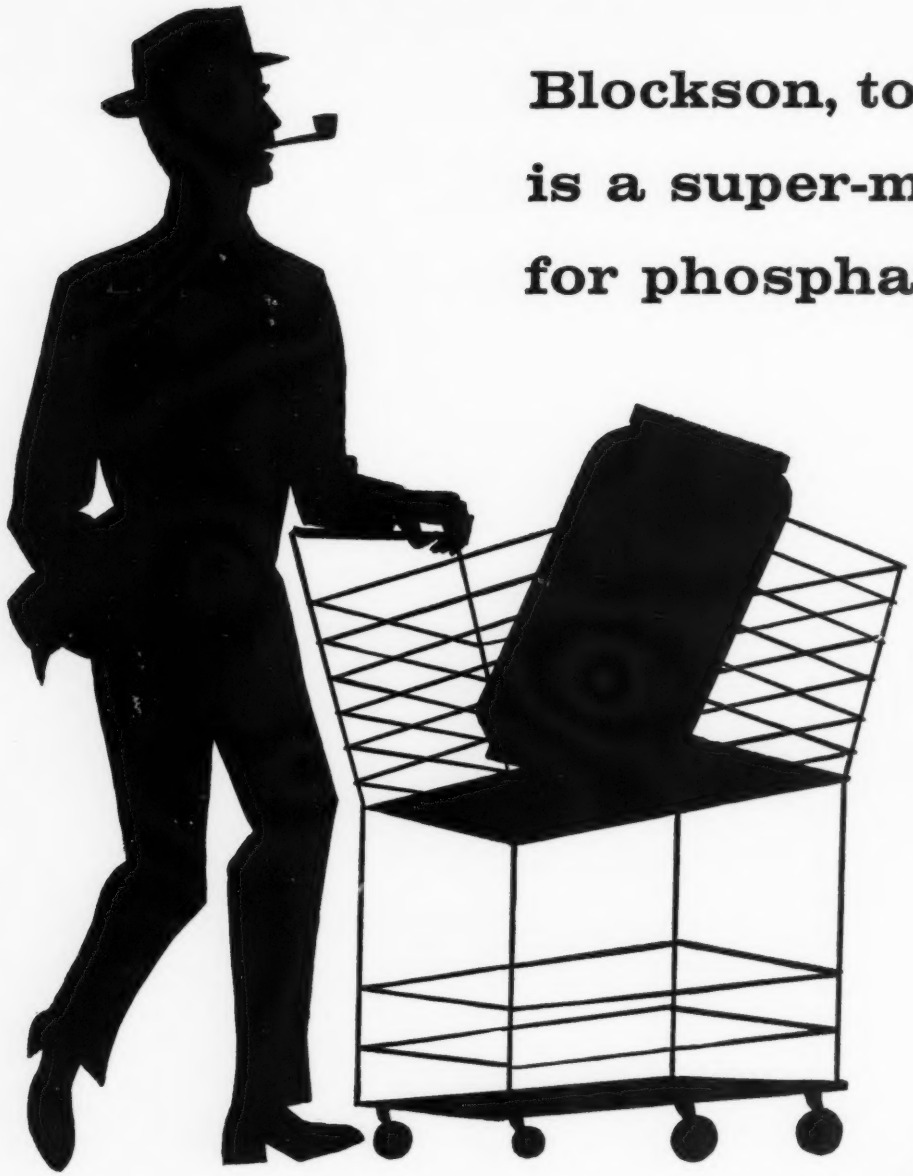

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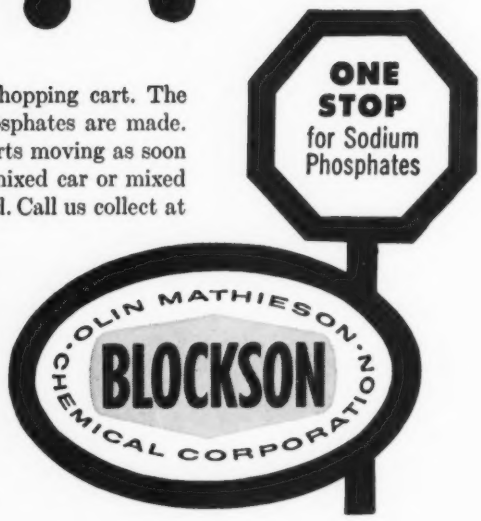
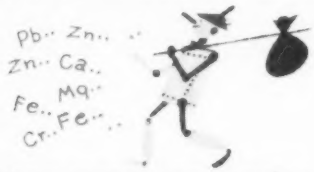


CYQUEST 40*

Breaks Specification Barriers by "Braking" Troublesome Metal Ions

"But does it meet our specs?"

When the answer to that question makes buyers unhappy, and salesmen reach for tranquilizers, a special type of chemical "additive" may be able to perform a rescue act. This hero *specializes* in ferreting out those metal ion impurities that prevent materials from passing purchasing specifications. By a novel type of chemical legerdemain, ionic villains are made to disappear, and *stay* "disappeared," so that discoloration, precipitation, odor — or *any* type of degradation caused by multivalent metal ions — is eliminated in processes and products. These ions, you see, are now tied up so securely in stable chemical complexes that they couldn't do harm if they tried . . . and we doubt that they even want to make the effort.



When metals go aroving

We are describing CYQUEST 40 Sequestering Agent — a sodium salt of ethylenediamine tetraacetic acid (EDTA). It is often called on to control these "devilish" iron ions . . . and also the nickel and copper that seem so prone to leave their blissful metallic state for wild adventure in the product streams. But CYQUEST 40 is equally useful in controlling over a dozen other overly sociable di- or trivalent metal ions that cause woe.

Do it now . . . or do it later

The effectiveness of CYQUEST 40 can be deduced from two chemical facts. First, each one of its molecules seizes on a metal ion in less time than it takes to say "tetrasodium ethylenediamine tetraacetate." Second, these chelate complexes are remarkably stable to heat and to wide pH ranges. This means that you need only as many moles of CYQUEST 40 as you have moles of metal ions present. It means, too, that CYQUEST 40 can be added at any time from the beginning to the end of a process . . . and whenever the process involves an aqueous phase, the troublesome metal ions will automatically be taken out of action.

Four examples of product upgrading

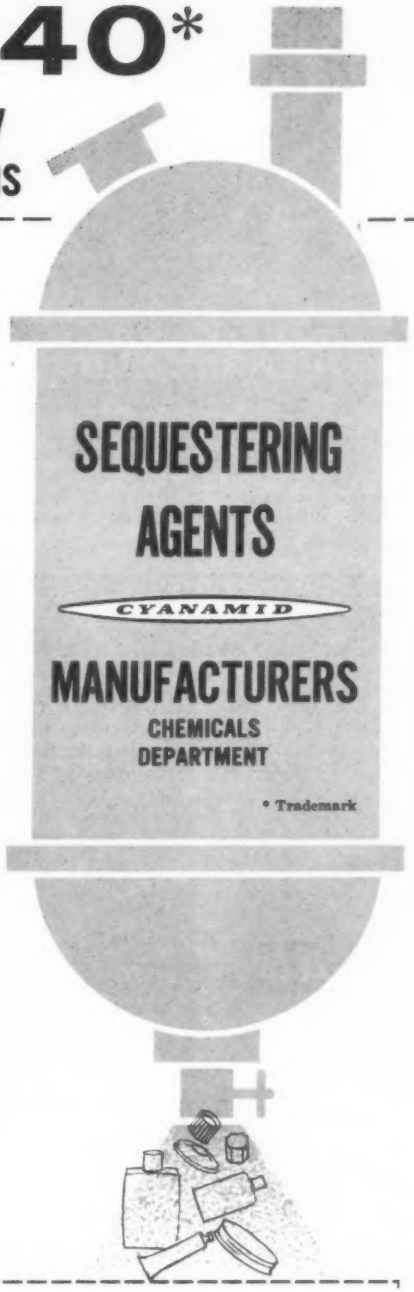
Let's look at some typical operations in which CYQUEST 40 can bring products into line with stringent specifications.

- In areas where water is "hard" or otherwise ion-contaminated, just meter CYQUEST 40 into the water supply. Not only is such treated water often equivalent to demineralized water for processing use . . . but it can also be made to have built-in protection against the unavoidable later introduction of metal ions.
- When organics are water-soluble, or contain water, CYQUEST 40 in the solution or water-phase can keep metal ions from reacting with the organic — or from catalyzing other degradation reactions.
- Precipitates can be freed of metal ion impurities by adding CYQUEST 40 to the initial solution or precipitating agent. The precipitate forms as usual and the metal ions pass on through with the filtrate.
- Metallo-organics are sometimes carried over in distillation operations. CYQUEST 40 in the still-pot can prevent these volatiles from forming . . . and metal impurities are kept in the still bottom where they belong.

If there's a gleam in your eye . . .

Cyanamid, alone, offers EDTA-based sequesterants in polyethylene-lined Liquipak drums. The 15-gallon drums have a collapsible, capped, flexible pouring spout that makes pouring a pleasure in lab or pilot plant. The 40-gallon drum is your most economical "package of sequestering action."

For those to whom practical application of CYQUEST 40 sequestering action is as yet a gleam in the eye, we offer samples and literature — via the coupon, which we invite you to tear out *now!*



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...Your Quality Guide

WATER EMULSION WAXES

Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

CANDY'S SUPREME (standard)
BRIGHT BEAUTY®
CANDY'S SUPREME Special WR
SUPER CAND-DOX®
CAND-DOX® #CS
CANDI-WAX #6000

All Candy's products are available for private brand resale and are sold only through distributors except for experimental accounts in Chicago essential to research.

Beauty and Durability

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-Slip

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax...beauty and protection.

Water Resistance

Frequent damp mopping or wet traffic can make water resistance very important. Over-doing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

Solid Content

The percentage of solid content is not nearly as important as the quality of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Over-waxing and resultant greater difficulty in removal for periodic maintenance may do more harm than good.

Carnauba Wax

The most important features of a good wax...all-around quality of performance...are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba alone imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given wax feature should be avoided and proper care taken to provide for most satisfactory performance.

Other HIGHEST QUALITY products of CANDY & COMPANY, Inc.

CANDI-COAT 1000, WATER RESIN EMULSION
As a floor coating for use under specific conditions of continued maintenance on certain types of floors this water resin emulsion has none of the faults associated with coatings of this type. It is the finest product in its class produced up to this time.

Bright Beauty WAX REMOVER & all-purpose SURFACE CLEANER
For removal of water-emulsion waxes from any floor without harmful effects. It is the perfect maintenance program wax remover and all-purpose surface cleaner. Pleasant odor, crystal clear color and thorough cleaning action with all types of equipment. Unaffected by hard freezing. Furnished ready for resale or in concentrated form for local packaging...nothing but water to buy or mix in.

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A cream furniture polish that spreads easily, polishes without excessive effort to a deep impressive lustre. Permits *repeated repolishing* with a dry cloth, thus saving many re-applications. A very economical polish of the very highest quality.

Bright Beauty PASTE WAX
Properly blended and refined from excellent quality solids and solvents that produce the best drying time and evaporation. Easy to handle, having "creamy" consistency and stability that lasts throughout storage and usage life.

Bright Beauty LIQUID (spirit) PREPARED WAXES
A complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each acts as a "dry cleaner" to keep surfaces waxed protected with a superb coating necessary for many applications such as wood and certain other types of floors; for bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH
As a glass cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanliness to glass. As a cleaner of silver, it polishes to a high lustre *without* abrasion and can even correct the abuses of scratchy "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX
Does not "ball-up" and gather dirt that impregnates floors with hard spots difficult to remove...free from dusty effects. Its protective quality adds more "floor-years" to expensive ballroom floors.

Bright Beauty Heavy Duty PASTE CLEANER
Cleans and scours more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive qualities, it frees almost every surface from all foreign matter.

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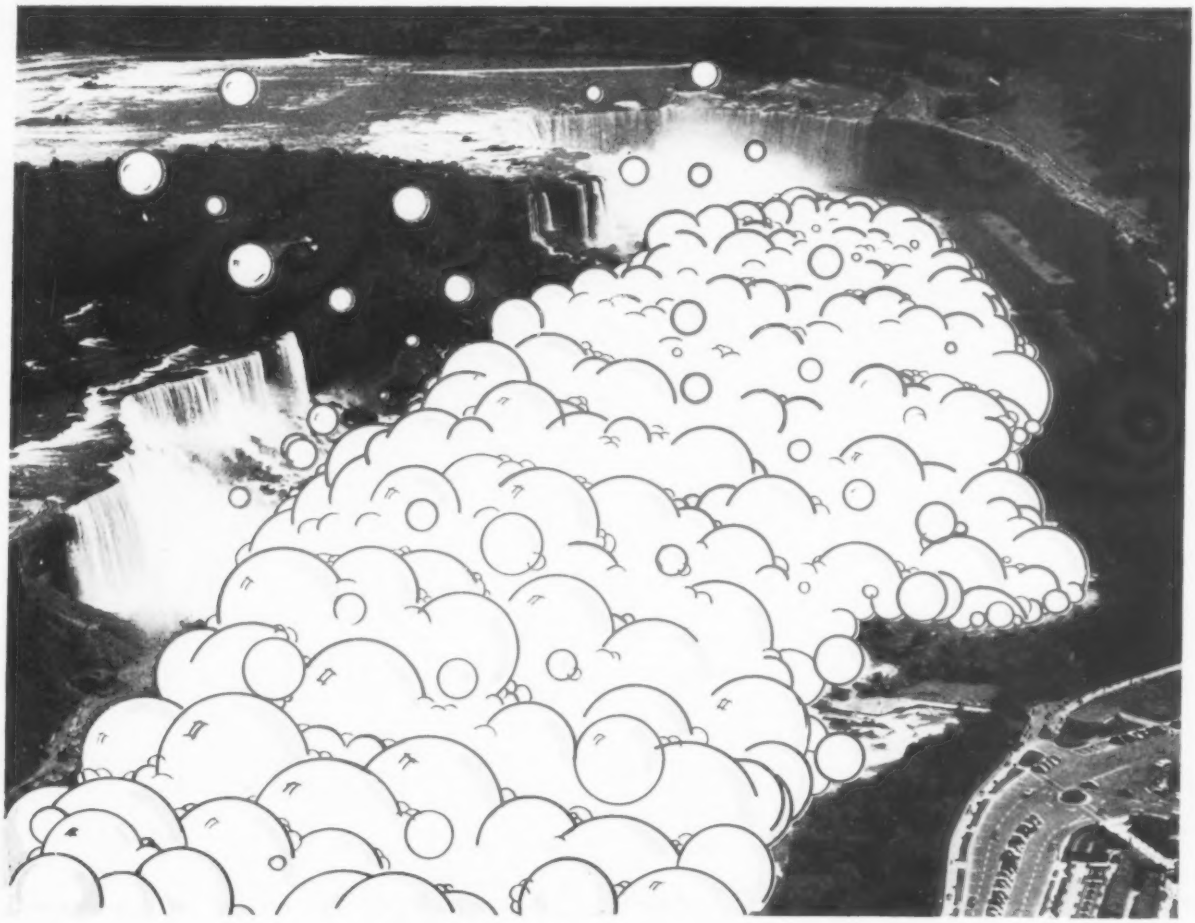

enough ***Nacconol®* Suds** to fill Niagara Gorge for years!

The 25th anniversary of household detergents has special significance for National Aniline. We were the first in America to offer a true synthetic detergent in commercial volume.

And NACCONOL was the first low-cost, mass-produced synthetic detergent based wholly on American petroleum sulfonates.

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Over the years, NACCONOL color, odor and detergency have been constantly bettered. There are now 14 physical forms to fit every need . . . each an excellent money-value.

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New Orleans Philadelphia Portland, Ore. Providence San Francisco

Allied Chemical

FINETEX

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PENETRANTS
EMULSIFIERS
WETTING AGENTS

Designed to improve your formulations

Expanded production of our Rueterg and Tauranol detergents enables us to serve more formulators. You can rely on Finetex products to step up quality and cut costs.

RUETERG Alkyl Aryl Sulfonates

RUETERG 97S — Liquid alkyl aryl sulfonate concentrate, 97% active. Formulations made with this concentrate do a better cleaning job and can be tailored to meet the formulators specific requirements for car washes, general household cleaners, pine disinfectants, institutional floor cleaners, textile detergents, etc. Excellent emulsifier for most solvents.

SLURRY #3 — 50% active alkyl aryl sulfonate cream-colored paste.

SULFONIC ACID— Concentrated alkyl aryl sulfonic acid for the chemist who wishes to do his own formulating.

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RUETERG 40U — Liquid, 26% active, high cloud point, low price.

RUETERG 57M — Liquid, 42% active, excellent resistance to hard water.

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TAURANOL MS — Slurry form, 45.8% active
TAURANOL ML — Liquid form, 33.3% active
TAURANOL MG — Clear, bright, heavy gel

The Tauranols cover a wide range of detergent applications where high foam and good stability are required.

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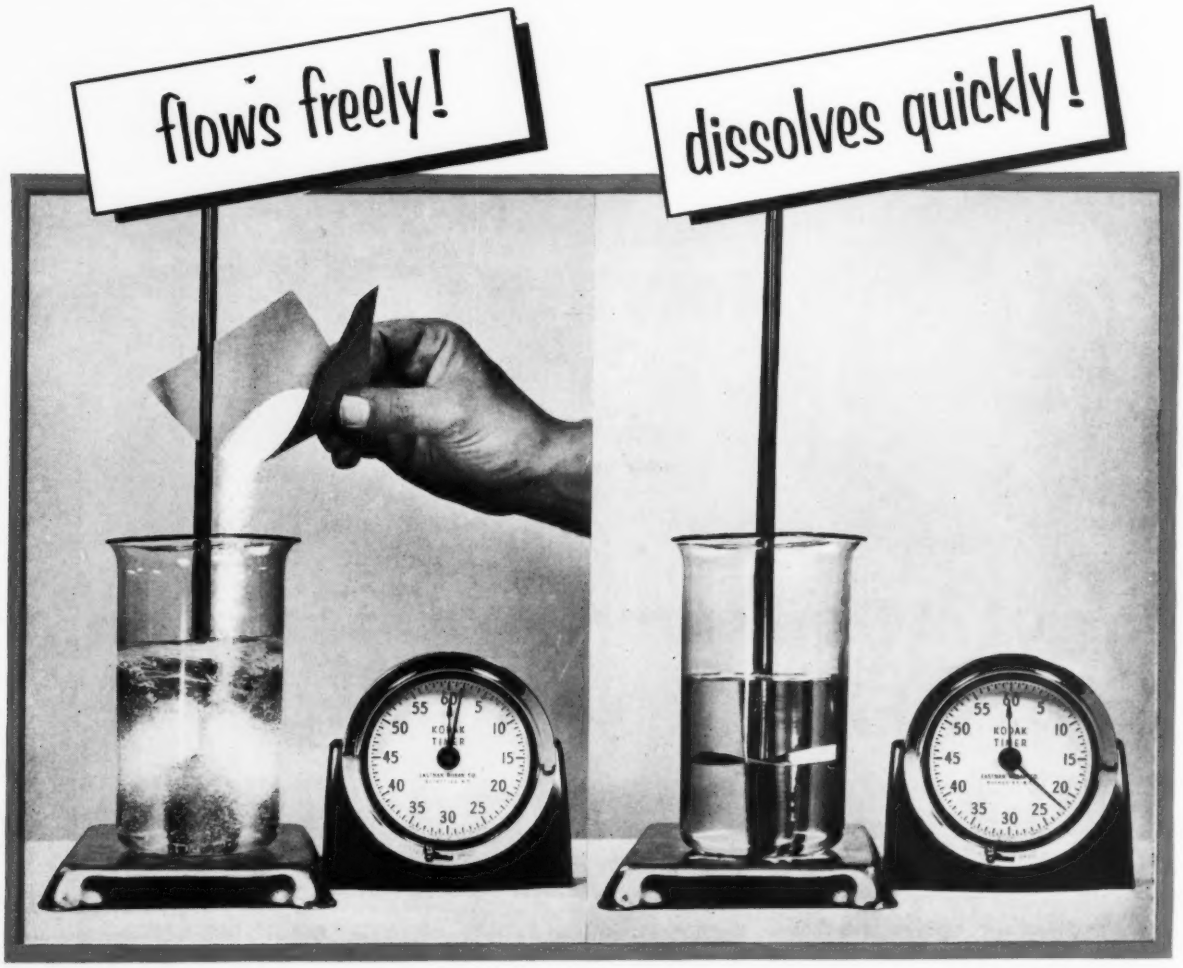
Westvaco® SODA ASH



Here's graphic evidence of two more ways Westvaco Soda Ash helps cut your production costs!

Exceptional flowability speeds unloading and in-process handling. Rapid solubility saves processing time and labor.

Other important benefits: Westvaco Soda Ash is non-caking, dusts less, is chemically pure, low in iron and insolubles and ammonia-free.

These are real advantages. They can be yours at no extra cost within our shipping area covering two-thirds of the United States. Let us quote on a fair share of your needs.

Putting Ideas to Work

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Stability during sulfonation

Uniformity and purity

Excellent color and odor

Makes detergents with exceptional wetting, cleansing and foam properties

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TECHNICAL ASSISTANCE—Whether you purchase in large or small quantities, Conoco technicians stand ready to help you improve a product or a process, to find new applications, to suggest ways of cutting costs.

May we suggest that you call or write today for samples and more information about Neolene 400.

CONTINENTAL OIL COMPANY

Petrochemical Department
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European Sales Office: Box 1207, Rotterdam, The Netherlands

An Elegant New World of Beauty!

Formulated with **ADM**'s Fine Oleyl Alcohol . . . .

(Cosmetic and Pharmaceutical Grade)

Adol 85

Here is the finest oleyl alcohol on the market today—new Adol 85 from Archer-Daniels-Midland. Its arrival gives you new yet economical ways to add important sales features to a broad range of cosmetics and pharmaceuticals.

Adol 85 was tailored for use in areas where the best never before has been obtainable except at prohibitive prices. Now a new manufacturing process produces oleyl alcohol of unusually high quality . . . but in a practical price range!

Here are a few Adol 85 features: light color, remarkable lack of odor, stability against oxidation and rancidity, resistance to hydrolysis, extreme mobility, superb plasticizing qualities, compatibility with nearly all waxes and emulsifying agents commonly used, and active penetration into capillary (and even sub-capillary) crevices.

In addition to these features, Adol 85 contributes important aesthetic advantages to cosmetics. It produces a remarkable, pleasant, new "feel" in preparations applied to the skin. It improves ease of application, leaves no sensation of excessive wetness or gumminess, and imparts to the skin a feeling of smoothness, freshness, and suppleness which lasts and lasts.

Write now for complete details, product specifications, and a sample if you wish.

ADM PRODUCTS: Linseed, Soybean and Marine Oils, Synthetic and Natural Resins, Fatty Acids and Alcohols, Vinyl Plasticizers, Hydrogenated Glycerides, Sperm Oil, Foundry Binders, Bentonite, Industrial Cereal, Vegetable Proteins, Wheat Flour, Dehydrated Alfalfa, Livestock and Poultry Feeds.

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Formulators in search of a forest-fresh woody aroma will be interested in SYLVENOL® and SYLVIOLA® by Penick.

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Sylvenol is an aromatic with an intense fragrance reminiscent of sandalwood, cedar, patchouli and vetivert. Ketonic in nature, it is an excellent modifier. Because of its power, it can be used in low concentrations to enrich and deepen fine perfumes, toilet waters and colognes. Sylvenol displays amazing stability . . . is not affected by weak alkalis or acids.

SYLVIOLA

Sylviola is an economical woody aromatic with many of the characteristics of Sylvenol. It possesses a strong cedar-like character with a suggestion of an orris-ionone undertone. Sylviola is a sesquiterpene ketone . . . pale amber in color and rather viscous.

Versatile Sylviola can be used in lavender and fougere types, amber and chypre types, plus a group of heavier modern fragrances.

Would you like a sample?

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A complete analysis of Cotton Detergency

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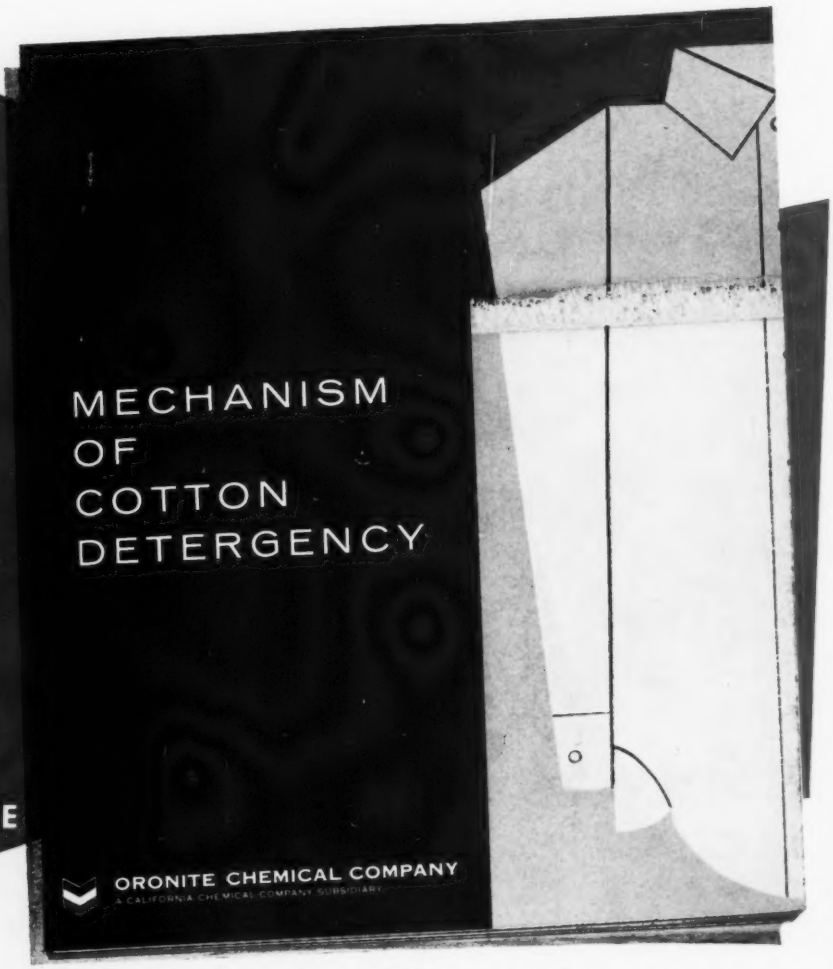

Now—for the first time—Oronite Chemical Company is making available a complete 16-page technical booklet on the mechanism of cotton detergency. Illustrated with helpful diagrams and sketches, the booklet presents a clear, comprehensive analysis of the factors involved in cotton detergency, including a detailed discussion of soils, the soil-fabric complex and the role of surfactants and builders in the cleaning process.

"Mechanism of Cotton Detergency" is another product of Oronite research, another reason why Oronite, producers of Oronite Alkane*, continues its leadership in developing and marketing highest quality detergent raw materials.

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After Closing

Toohy Heads Squibb Div.

John J. Toohy has been appointed chief operating executive of the Squibb division of Olin

John J. Toohy

Mathieson Chemical Corp., Baltimore, it was announced last month by the company. Mr. Toohy, who is a corporate vice-president of Olin Mathieson and general manager of the division, succeeds John C. Leppart, who has retired but continues as a consultant.

With Squibb since 1922, Mr. Toohy became general manager in 1951. His title remains unchanged.

★

Revlon Names Pacent

The appointment of Louis G. Pacent as vice-president—manufacturing was announced last month by Revlon, Inc., New York. Mr. Pacent will direct all manufacturing, shipping and west coast warehousing operations. Previously he was vice-president—manufacturing of the Emerson Radio and Phonograph Corp.

★

Ginsburg Resumes Duties

Joseph M. Ginsburg has resumed his duties at the New Jersey Agricultural Experiment Station of Rutgers University, New Brunswick, N. J., as research specialist in entomology and toxicology.

Dr. Ginsburg recently completed a two-year assignment in Israel as advisor to the Israel Ministry of Agriculture on toxicology and plant protection problems. The assignment arranged by the research foundation of the State University of New York under the auspicies of the United States Operations Mission and sponsored by the International Cooperation Administration.

★

Hagan Appoints Illig

George L. Illig, Jr., has been named assistant to the vice-president of industrial chemical sales of Hagan Chemicals & Controls, Inc., Pittsburgh.

With the firm since 1946, Mr. Illig was previously pilot plant engineer, assistant manager of the company's Ellwood City, Pa., manufacturing plant, and assistant manager of the headquarters threshold department.

★

Sheppard Joins Magee

Charles R. M. Sheppard, secretary-treasurer of Fenole Chemical Co., Jacksonville, Fla., resigned August 29 to join Magee Chemical Co., Bensenville, Ill. maker of floor cleaning, sealing and floor maintenance materials. Mr. Sheppard will move to Atlanta and will cover nine southeastern states from that city. He had been with Fenole since 1928, with the exception of nine years he spent attending and working at Stetson University, De Land, Fla. He received his law degree from Stetson and is a practicing attorney. He enlisted in the U. S. Army in 1942, received a commission the following year and, during service in Europe, rose to the rank of Captain. He served with the War Crimes Commission following the end of World War II, and in 1948 rejoined Fenole. He was plant manager and eventually became secretary and treasurer and general manager of the firm.

Fenole, headed by A. J. Bernard of Miami, president, was founded by W. R. Powell as an insecticide manufacturing firm on Sept. 1, 1908. It remained in the insecticide business until 1928, and claims

C. R. M. Sheppard

to have sold over 90 percent of the insecticides used in the South during its most successful years.

John P. Sullivan, office manager of the firm, who was named to succeed Mr. Sheppard, died Aug. 30th in St. Vincent's hospital, Jacksonville, following a severe heart attack on Aug. 27. Fenole will now be managed by A. J. Bernard.

Mr. Sheppard, who led the fight on the sale of prison made goods in Florida in competition with those of private enterprise, served as a director of the National Sanitary Supply Association.

★

Colgate Appoints Two

H. E. Moore, Jr., has been appointed sales representative in the Little Rock, Ark., territory for Colgate Palmolive Co., New York, and E. E. McAteer has been named sales supervisor of the Memphis division of the St. Louis district.

Mr. Moore has been with the firm's central office in Belleville, Ill., and Mr. McAteer has been with the company about ten years.

NSSA West Coast Show Set for Oct. 19-21

PLANS are rapidly being completed for the National Sanitary Supply Association Industry Management and Trade Show to be held at the Fairmont Hotel, San Francisco, Oct. 19-21. More than 20 chemical specialties manufacturers will exhibit their product lines at the trade show.

In addition to the show, the meeting will feature an Industry Management Seminar covering numerous phases of the sanitary supply and specialty field. The program, arranged by Herbert J. L. Baum, Mipro Metal Products Co., San Francisco, general chairman of the conference, is being coordinated by Water A. Diehm, assistant dean of the Graduate School of Business at Stanford University.

The seminar will be divided into several sections, the first phase covering such topics as "How Much Should My Company Be Earning?"; "What Should My Profit Be?"; "How Do I Determine My Selling Expense Ratio, Gross Profit Ratio, and Break Even Points?". Discussed in the second portion of the seminar will be "Internal Organization and the Job of the Manager," "Simplification of Office Procedure," and "Warehousing and Production."

Other items listed for discussion at the seminar include "Communications and Human Relations;" "Procedures for Conducting Sales Meetings and Conferences;" and "Problems of Taxation for Small Business."

Manufacturers of chemical specialties and related items and services who will display the latest developments in sanitary supplies and chemicals include:

American Dispenser Co., New York; B & W Chemical Co., Harbor City, Cal.; B. T. Babbitt, Inc., New York; Bobrick Dispensers, Inc., Los Angeles; Camp Chemical Co., Brooklyn N. Y.; Candy & Co., Chicago; Chemical Service of Baltimore, Baltimore; Federal Varnish Division, Chicago; Fuld Brothers, Inc., Baltimore; Golden Star Polish Mfg. Co., Kansas City, Mo.; R. M. Hollingshead Corp., Camden, N. J.; The MacCarl Co., Cleveland; Magee Chemical Co., Bensenville, Ill.; *Maintenance & Sanitary Supplies* magazine, New York; Moore Brothers Co., New York; Multi-Clean Products Inc.; St. Paul, Minn.; Peck's Products Co., St. Louis; Piatt & Smillie Chemicals, Inc., St. Louis; Roubon Inc., Independence, Mo.; Silver Brush Works, Inc., Chicago; Simoniz Co.; Chicago; Walton-March, Highland Park, Ill.; and T. F. Washburn Co., Chicago.

★

Zemlin Joins Trancoa

John C. Zemlin has joined Trancoa Chemical Corp., Reading, Mass., as director of product development. Previously Mr. Zemlin was with Rayette, Inc., St. Paul, Minn.

★

New Hooker Division

Four plants formerly operated by Shea Chemical Corp., Jeffersonville, Ind., which merged with Hooker Chemical Corp., Niagara Falls, N. Y., May 29, 1958, have been designated as the "Phosphorus Division," it was announced last month by Hooker. The four plants are located at Adams, Mass., Columbia, Tenn., Jeffersonville, Ind., and Dallas, Tex.

Heading the new division are Oscar D. Crosby as general production manager, John B. Sutliffe as general sales manager, Percy T. Brewbaker as division traffic manager, and Edward J. Bissaillon as division engineer, according to Thomas E. Moffitt, Hooker president.

Works managers are Harold H. Fletcher, Jr., at Adams, H. William Kopp, Jr., at Dallas, Joseph T. Hanson at Jeffersonville, and Theodore T. Garret at Columbia.

John B. Sutliffe

Mr. Crosby joined Shea in 1952 as superintendent of its phosphate production facilities and was recently made senior vice-president—production.

Most recently Mr. Sutliffe was senior vice-president—industrial sales. He went with Shea in 1955 after 17 years with Allied Chemical Corp.

★

Hollingshead Sheets

A new series of catalog type, product information sheets, available to both industrial/institutional consumers and maintenance supply distributors was announced early in August by the Industrial Maintenance Division of R. M. Hollingshead Corp., Camden, N. J. Seven of the eight sheets in the new series, printed in black, blue and yellow, carry information on individual floor maintenance products. The eighth sheet, which is also punched with three holes to fit a three ring binder, carries product information on the Hollingshead "Five Star Floor Maintenance Program." Five products are described and their containers illustrated on this sheet. The products featured are a floor finish, floor wax, general purpose wet maintenance cleaner, a dry maintenance compound for treating dust mops and cloths, and a floor stripper.

According to Richard S. Moseley, manager of the industrial maintenance division, this new series of product information sheets represents a new concept in product advertising. The "Five-Star Floor Maintenance Program," as the series is designated, combines three separate features: 1.) A complete floor maintenance program covering both wet and dry floor maintenance; 2.) A thorough description of the individual products and methods of application; 3.) Technical service bulletins giving both chemical and physical characteristics of the materials.

CSMA Compiles Label Laws

The Chemical Specialties Manufacturers Association recently announced availability of its first "Complete Compilation of Labeling Laws and Regulations for Hazardous Substances." Prepared by John D. Conner and Robert L. Ackerly, association counsel, in cooperation with the executive staff of CSMA the 111 page book has a removable cover for inserts and additions. It is available at $5.00 a copy from CSMA headquarters at 50 East 41st St., New York 17.

★

Toni Advances Bogaty

Herman Bogaty has been advanced to associate research director for Toni Co., Chicago, it was announced last month by Raymond E. Reed, vice-president of technical operations.

In his new assignment Mr. Bogaty is in charge of the firm's research and development programs in the home permanent waving field. He also continues to be responsible for the company's experimental beauty clinics and analytical chemistry section. Toni is a division of Gilette Co., Boston.

Before joining Toni, Mr. Bogaty was employed for seven years by Harris Research Laboratories, Washington, D. C., another Gilette division.

★

Thiram Liquid Suspension

A liquid suspension of thiram for the treatment of seed and for use as a paint or spray repellent against rodents, rabbits, deer, and birds, has been developed by E. I. du Pont de Nemours & Co., Wilmington, Del.

Called "Arasan" 42-S seed disinfectant and protectant, it is said to be the first product to offer the safety and fungicidal efficiency of thiram with the convenience and other advantages of a liquid formulation.

"Arasan" 42-S is a stable suspension of extremely fine particles of thiram, containing four pounds of active material per gallon of product. The liquid formulation is easy to measure and disperses almost instantaneously when it is added to water. The fine particles of chemical are said to adhere tightly and uniformly to the seed without dusting off.

The new product also is said to have natural sticking qualities which eliminate the need for a sticking agent when it is used undiluted. A concentrated spray made with "Arasan" will flow through common types of spray nozzles because of its small particle size and smooth, stable suspension.

★

Revlon Names Kirk

George C. Kirk has been appointed vice-president in charge of sales for Revlon, Inc., New York, it was announced last month by Charles Revson, president. He succeeds Charles R. Ruston, resigned.

Previously, Mr. Kirk was associated with International Latex Corp. most recently as vice-president of sales for the Playtex division.

★

Retzloff Appoints Trevino

Servando Trevino has been appointed international sales and technical service representative in Mexico for Retzloff Chemicals Co., Alameda, Texas, manufacturers of detergents, wetting agents, and surface active compounds. He is making his headquarters at the Quimica Retzloff, S. A., offices in Mexico City.

Previously Mr. Trevino was with Wood Chemical Co. as representative in Mexico and later as chief chemist.

Servando Trevino

P&G Aid To Colleges

Procter & Gamble Co., announced last month contributions of more than $300,000 in unrestricted gifts to 10 leading universities and 39 state associations of colleges with memberships totaling 467 institutions. The gifts are part of the firm's aid-to-higher-education program which amounts to nearly $1 million annually.

The 10 universities received $20,000 each and the associations received $110,000 to be divided among their member colleges which enroll a total of 400,000 students. With the remaining amount of money in its program, Procter & Gamble annually provides $400,000 for scholarships; $110,000 for post graduate fellowships; and $80,000 in contributions to educational funds and other special grants.

★

Tennessee Names McMahon

E. Keith McMahon has been appointed chemical sales division manager of Tennessee Products & Chemical Corp., Nashville, it was announced last month by Rolland O. Baum, president.

Joining the firm's research staff in 1949, Dr. McMahon subsequently served as supervisor of the chemical engineering section, as manager of technical sales development, and as director of development.

★

Perfumery Course Offered

The University extension division of Rutgers-The State University, Newark, N. J., has announced a special program called "Perfumery and Essential Oils" which begins Sept. 22nd.

The course, divided into laboratory and lecture sections, is an introductory study of the art of perfumery with special training in the identification, compounding, and manufacture of natural and synthetic aromatics. Emphasis also will be given during the course on the scientific aspects of chemistry to the art of perfumery. Steffen Archtander, perfumer of Colgate-Palmolive Co., New York, is the instructor for the program.

Calgon To Display Unit

Calgon Co., Pittsburgh, a division of Hagan Chemicals & Controls, Inc., plans to display its new electronic detergent control unit and entire line of commercial detergents at the American Dietetic Association show in Philadelphia Oct. 21-23.

Called "Calgomatic" detergent control, the unit is said to provide greater control over dish machine operation and to reduce labor and hot water costs. It is available with remote controls.

—★—

Disbands Floor Machine Co.

Columbia Wax Co., Glendale, Calif., has dissolved its floor machine sales division, Columbia Floor Equipment Co., it was announced recently. The decision was made in order to permit Columbia Wax to concentrate its sales efforts on floor maintenance products, according to C. H. Richardson, director of marketing. Sales of the company's floor care products increased more than 25 per cent in the first three months of 1958 from the volume recorded in a comparable period a year ago.

Floor equipment sales personnel, including C. H. Douglas sales manager, have been transferred to the parent company to staff newly-opened territories. The division was southern California distributor for American Floor Machine Co., Toledo, O., and Lincoln Floor Machinery Co., Bowling Green, O.

—★—

Skin Disease Prevention

Ninety per cent of all industrial skin diseases result from contact with chemicals, reports the committee on occupational dermatoses of the American Medical Association in the Aug. 30th issue of the AMA *Journal*. Leading the list of causative agents are petroleum products, greases, alkalies, and solvents.

The committee recommended several measures that can limit the development of dermatitis. Acknowledging that personal cleanliness is the most important preventive, the committee went on to recommend a clean and well-ventilated plant; conveniently located washing facilities; skin cleaners; availability of showers; protective clothing; gloves; and protective ointments as the chief safeguards against skin diseases.

—★—

New P & G Subsidiary

Formation of Procter et Gamble—Maroc, with headquarters in Casablanca, Morocco, was announced last month by Procter & Gamble Co., Cincinnati, O. The new company is a subsidiary of Procter & Gamble, A. G., Luzern, Switzerland.

The subsidiary has been chartered for the manufacture and marketing of products in the fields in which P & G operates and will begin packaging "Tide" synthetic detergent for the Moroccan market in the near future, according to Donald H. Robinson, vice-president for overseas operations.

Although P & G products have been sold on an export basis in Morocco for a number of years, this is reported to be the first P & G manufacturing operation in that country. Mr. Robinson stated that the firm's products will continue to be sold in Morocco through the Level Export Corp., Casablanca.

—★—

White King TV Contest

A Chrysler station wagon, a vacation trailer, and an outboard motor boat headed the list of 200 prizes just awarded in "Name The Sheriff's Ranch" contest, sponsored by White King Soap Co., Los Angeles. According to William Aitken, White King advertising manager, more than a quarter of a million entries were received from residents of 12 western states and Texas. The contest called for entrants to submit a name for a ranch recently purchased by John Bromfield, star of the "Sheriff of Cochise" television show, sponsored by White King since 1956. In addition to the three top prizes there were free food certificates, 22 worth $100.00 each and 175 worth $20.00 each.

Roche Appoints Monday

Wilbur M. Monday has been advanced to the newly created position of trade relations manager for Roche Laboratories, division of Hoffman-La Roche, Inc., Nutley, N. J., it was announced last month by the firm.

Joining the company as a representative in 1931, Mr. Roche was named sales promotion manager in 1946.

—★—

Jefferson Names Gilroy

J. W. Gilroy has been appointed to the newly created post of export sales manager of Jefferson Chemical Co., Houston, Tex., it was announced last month by J. R. Carlson, sales manager. In his new post, Mr. Gilroy is responsible for administration, planning, and direct sales activities in foreign markets. He is headquartered at the firm's New York offices and works under the supervision of P. R. Monaghan, eastern regional manager.

—★—

Granted Incorporation

Modern Specialties Co., Inc., Salisbury, N. C., has been grantd a charter of incorporation to deal in chemical specialties, cleaning compounds and powders, and dry cleaning equipment. The firm listed authorized capital stock of $100,000. Incorporators are Letha B. Howard and H. B. Howard, both of Salisbury, Mary H. Wright of Birmingham, Ala., and Betty H. Braden of Greensboro, N. C.

—★—

D&O 160 Years Old

Dodge & Olcott, Inc., New York essential oil, aromatic chemical, flavor and perfume base firm, celebrates the 160th anniversary of its founding next month. Established in 1798, D&O is the oldest firm of its kind in the United States. Acquired by Fritzsche Brothers, Inc., New York, in 1957, D&O's products are used in a wide range of products including soaps and detergents, chemical specialties, cosmetics, drugs, food and industrial odorants.

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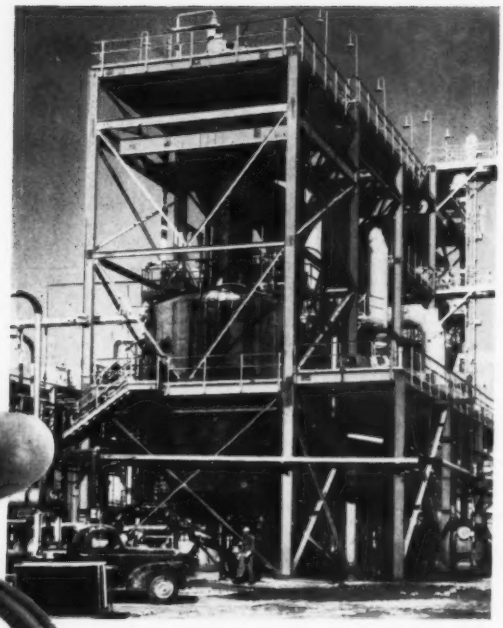

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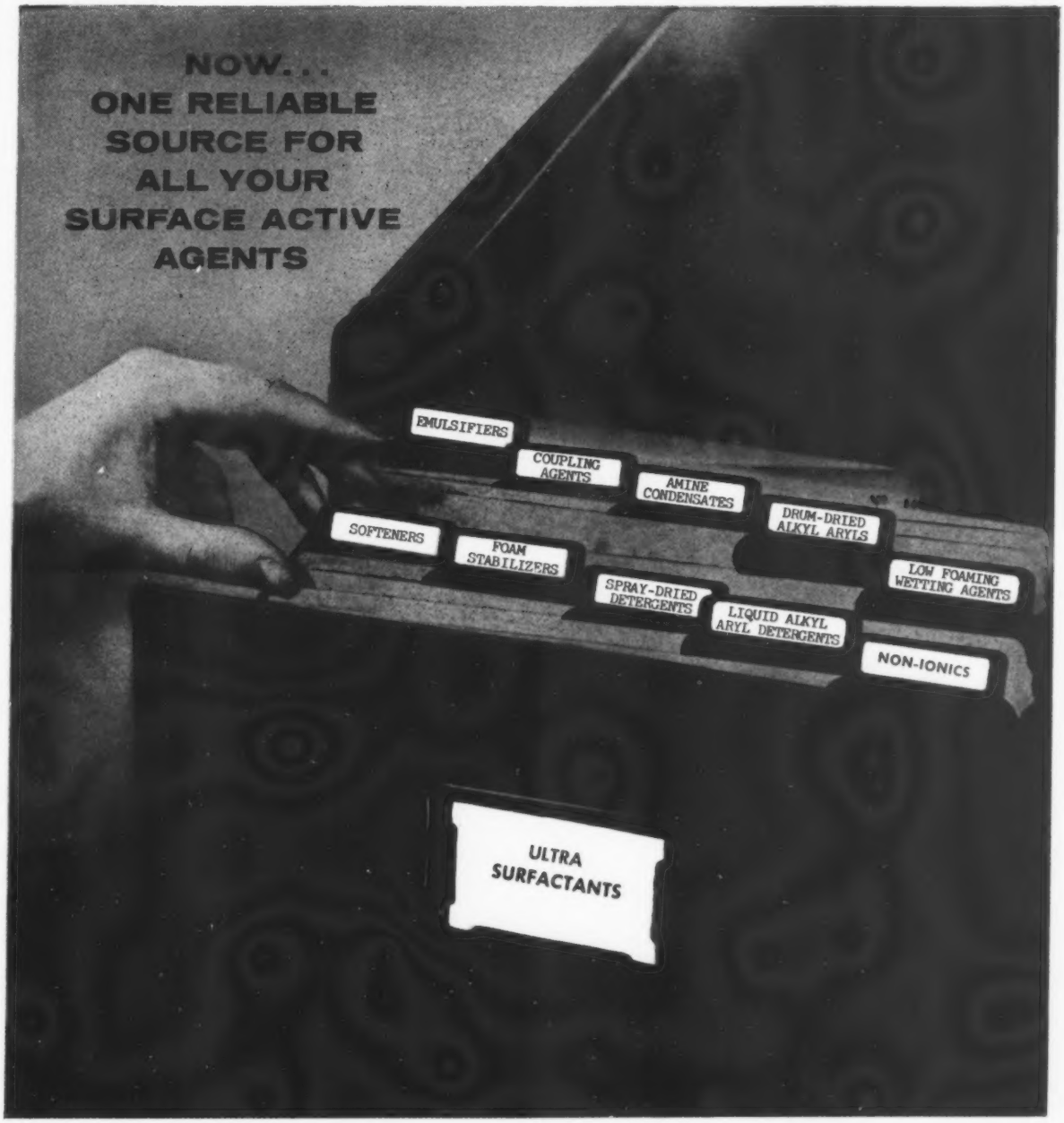

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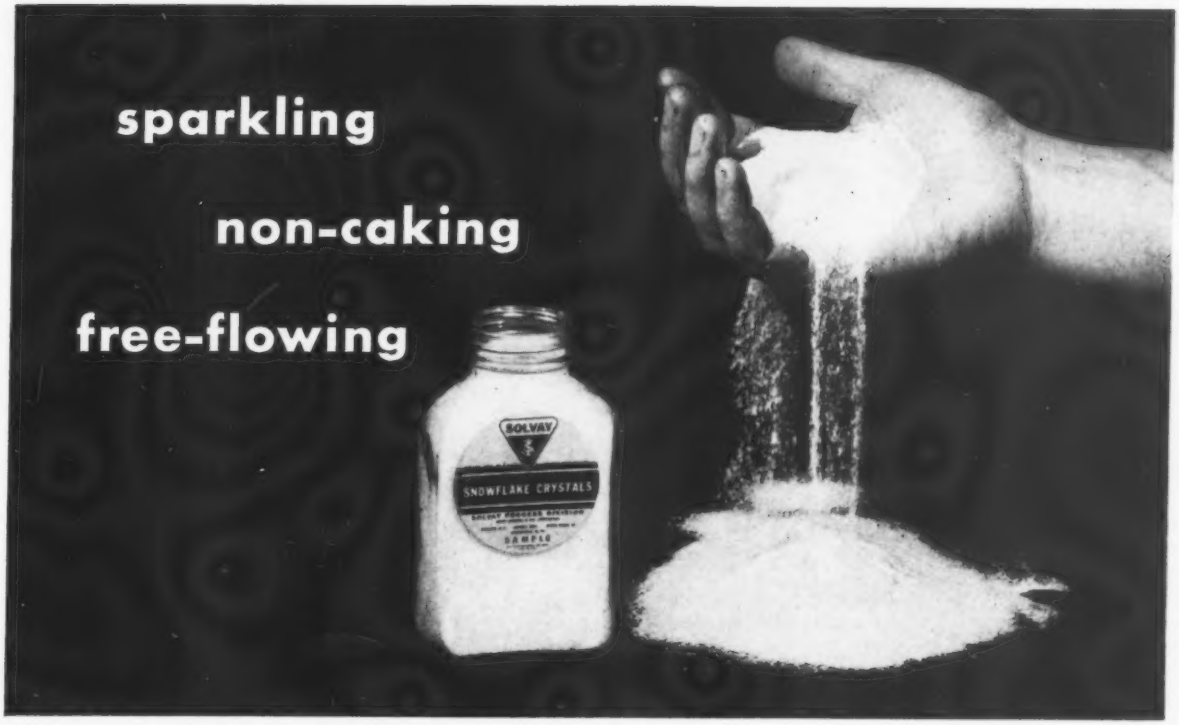

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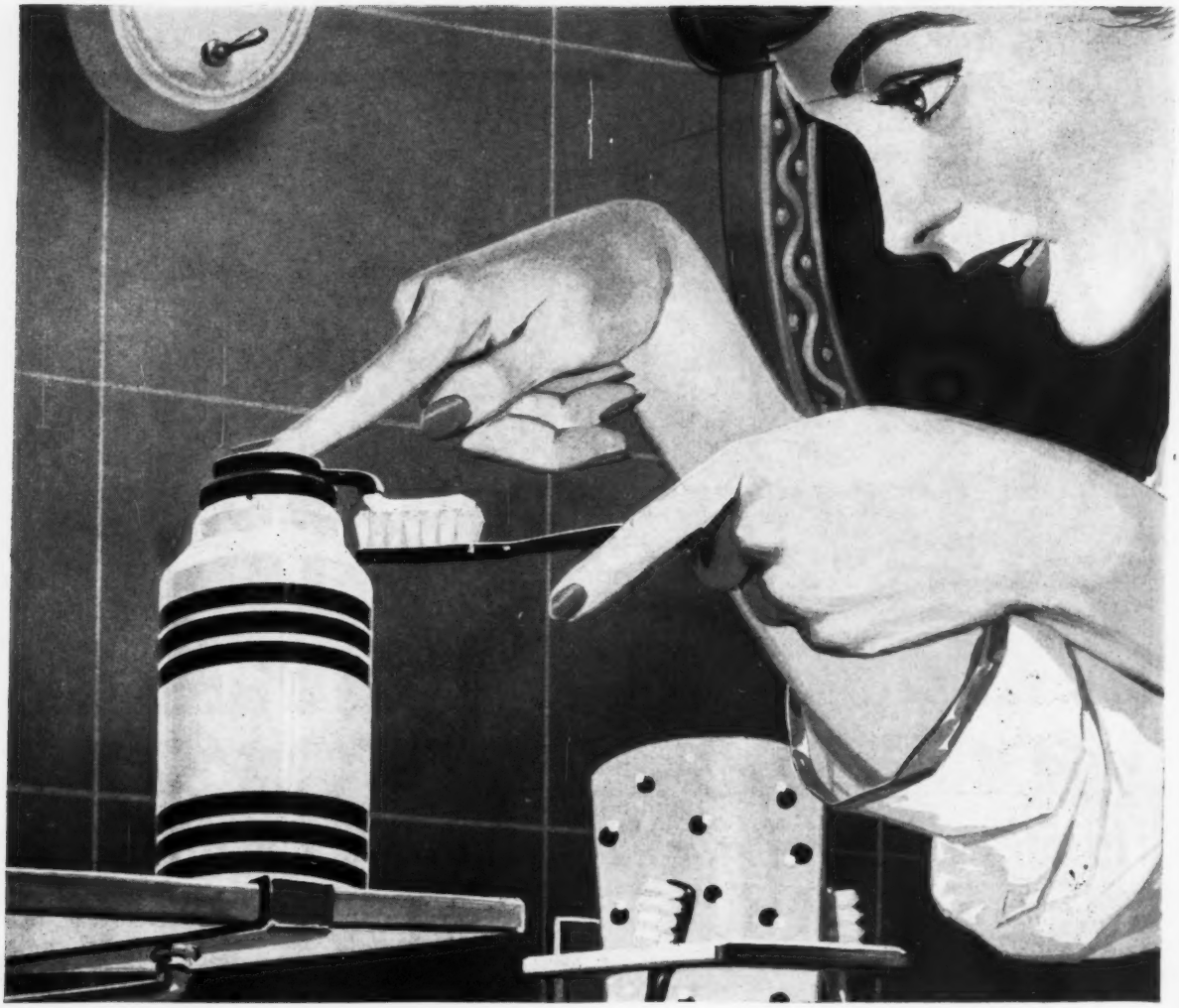

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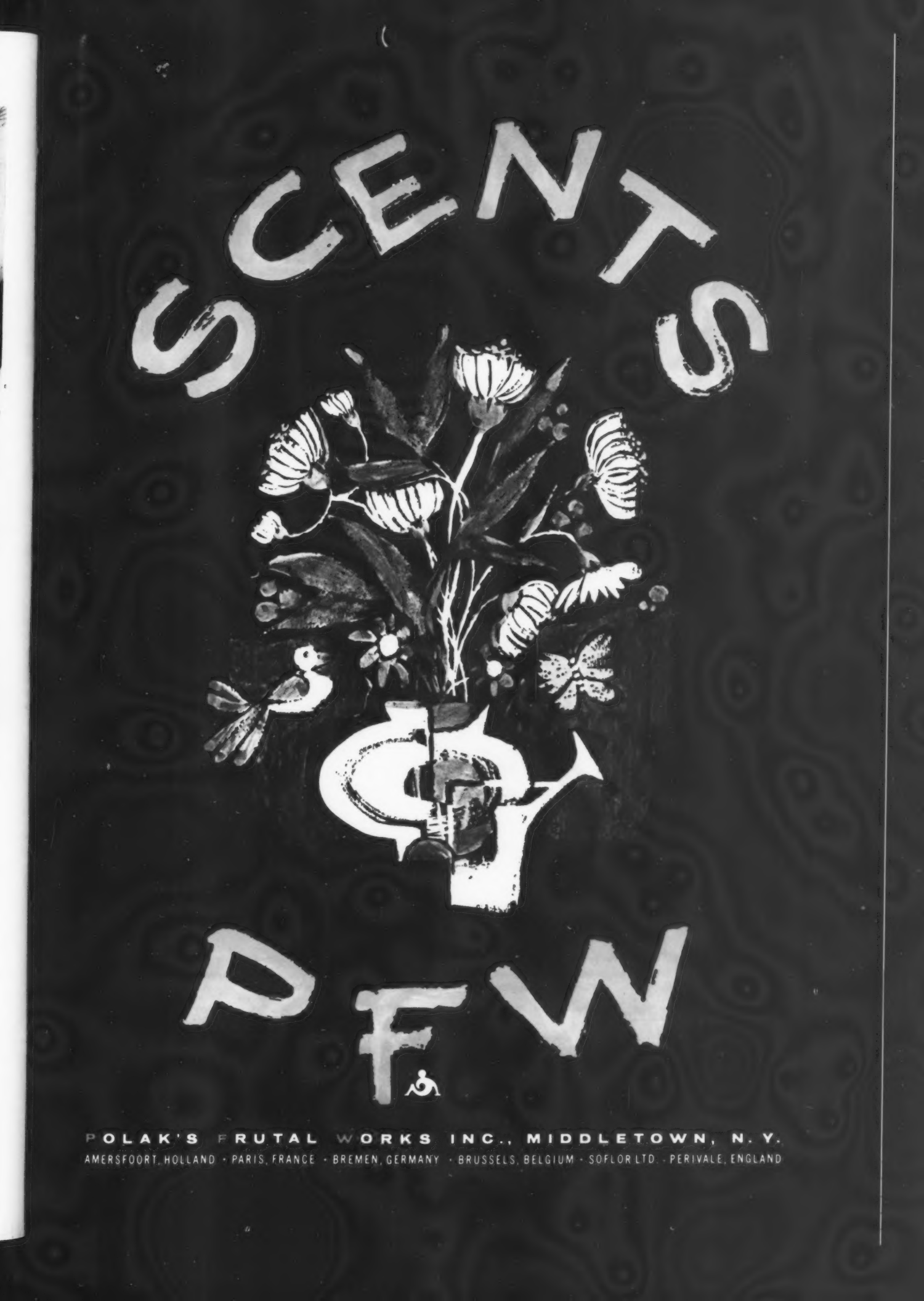

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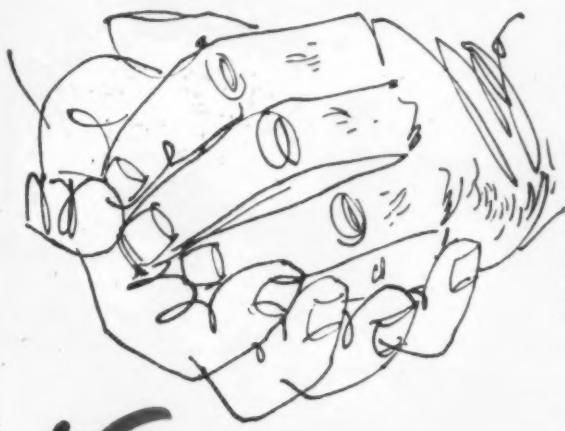

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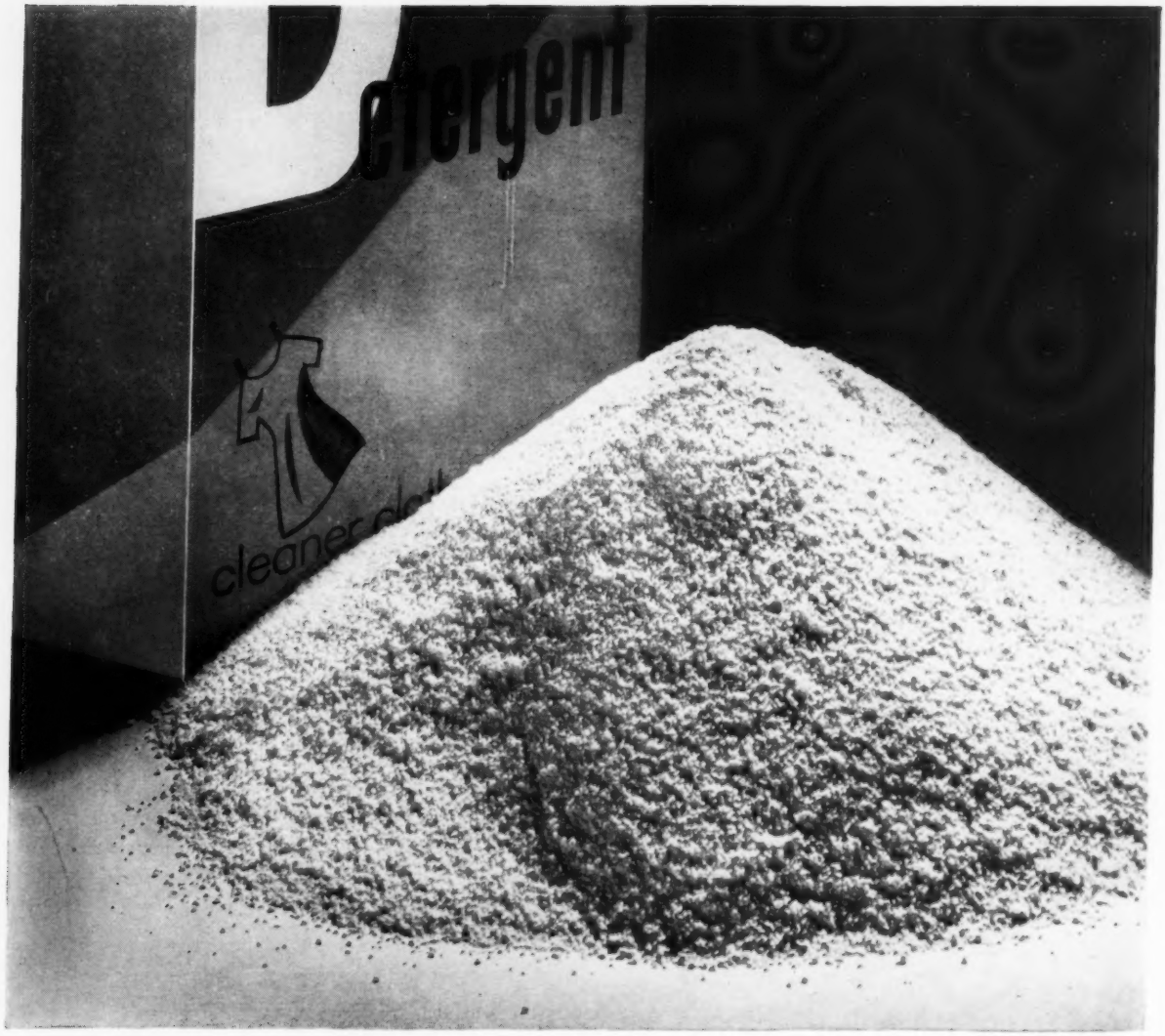

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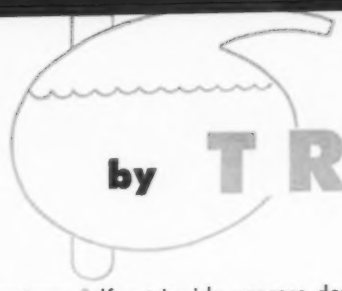

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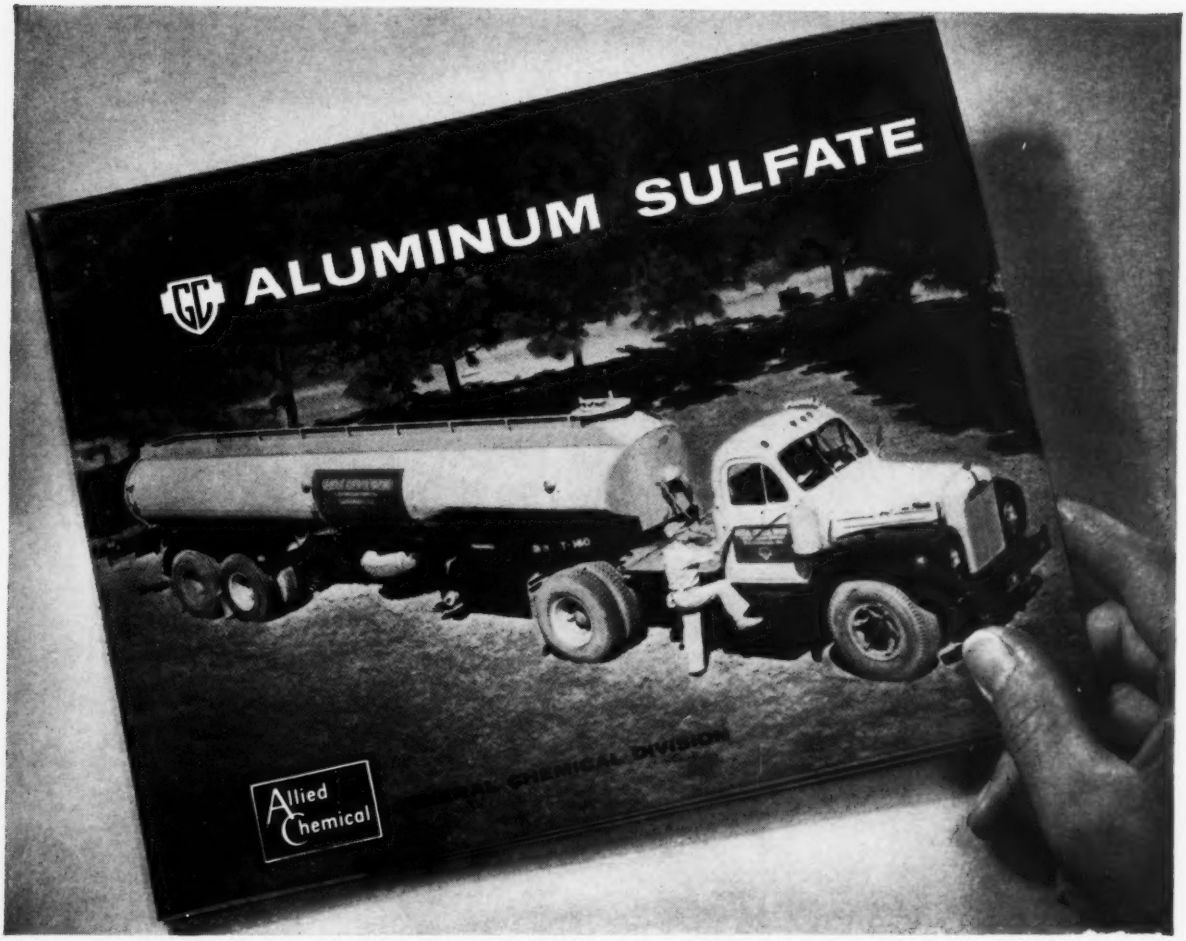

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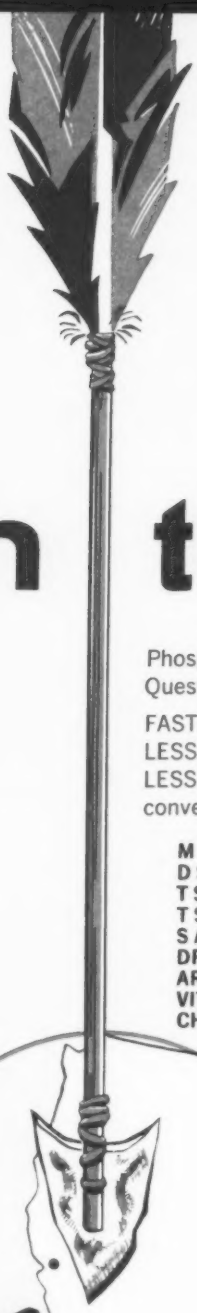

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Mol. Wt.	221.97	266.0	367.9	Glass network
TYPE	Powder Fine Gran.	Powder Gran.	Powder Gran.	Gran.
P_2O_5	63.0%	52.9%	57.7%	63-64%
Solubility Range Lbs./gal. water 20 C.	1.55 @ 40°C 1.00 @ 20°C	3.40 @ 80°C 0.35 @ 20°C	2.0 @ 90°C 1.20 @ 25°C	Greater than 12.0
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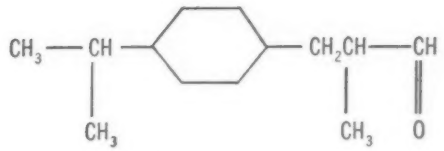

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Kyro EO — A neutral nonionic synthetic detergent of the 100% alkyl-phenol ethylene oxide condensate type. A light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer detergents, self emulsifying solvents, laundry detergents, glass, textile and dairy cleaners, insecticides, and bottle washing compounds.

AMBER GRANULES — A neutral 88%, 42° titer-type soap of exceptional purity and uniformity. Well suited for the preparation of paste or gel-like products because of its high titer. Its granular form makes it ideal for powdered products. Excellent for the preparation of hand cleaners, paste cleaners, polishes, lubricants and coatings.

ORVUS WA PASTE. A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium alkyl sulphate. Excellent sudsing, wetting, dispersing and penetrating properties. Ideal for paste and liquid shampoos, bubble baths, liquid detergents, liquid car washes, liquid floor cleaners, insecticides, glass cleaners, rug and upholstery cleaners.

SEVEN SIGNPOSTS

to successful formulation from Procter & Gamble

ORVUS ES PASTE. A specially developed synthetic detergent whose active ingredient is mainly modified alkyl sulphate. Offers exceptional efficiency and stability over a wide range of operating conditions. Wetting, penetrating, sudsing, dispersing and emulsifying properties make it excellent for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.

IVORY BEADS — A medium titer, neutral white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, polishes, protective creams, dishwashing compounds and paper coatings.

ORVUS AB GRANULES — A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulphonate type. A white product that can be used effectively in the blending of bubble baths, car washes, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners.

Procter & Gamble's Products Research Department will gladly supply you with information on how you can save time and money when you formulate with Procter & Gamble products. You can also get technical help in connection with their use by writing to:

ORVUS K LIQUID. A modified, highly concentrated ammonium lauryl sulphate—modified for increased sudsing and mildness. Exceptionally low cloud and pour points. Highly fluid and easy to handle. Ideal for clear liquid shampoos and liquid detergents where high foaming is required.

Procter & Gamble
BULK SOAP SALES DEPARTMENT
P. O. BOX 599
CINCINNATI 1, OHIO

as the editor sees it . . .

TWENTY-FIVE . . . Household synthetic detergents have achieved quite a record for themselves in the 25 years since their introduction in a few hard-water, test cities of the midwest back in 1933. Particularly impressive is the fact that they overtook and completely overshadowed their competitor, soap, which had a headstart of about 2000 years. Latest figures indicate that close to 73 per cent of all soaps and detergents produced in the U.S. are synthetics and 90 per cent of all packaged household detergents are of the synthetic variety.

The magnitude of the achievement pioneered by the launching of Procter & Gamble's "Dreft", or "Drift" as it was first named, can be gauged better by keeping in mind that World War II interrupted the development of synthetics. Actually, it was in the neighborhood of 1946 when the marketing of these new products really got under way on a large scale.

To the obvious question, "Why have these products been so successful?", there are two fairly simple and ready answers. First, they were better products and have been constantly improved and, secondly, new and more effective marketing techniques have been developed for them. This may be an oversimplification, but how else can the revolution that has taken place in the soap industry be explained?

* * * * *

LIQUIDS . . . From the looks of things, liquid cleaners and detergents are here to stay. That we assume from the number of new products which have come on the market and the increase in sales of established items. This is true in both industrial and household products. Today, everybody has to have a liquid or they're not in the swim. Liquids have stolen the spotlight.

The recent rise in liquids seems to be just another era in the over-all revolution in detergents and soaps of the past quarter-century. That their advent has caused upheavals in many a detergent plant is quite apparent, particularly a switch in packages and packaging equipment. For every package of liquid sold, it probably means one less carton of powdered detergent. It means bottles, cans, pails and drums in place of cartons and other dry packages. It means liquid filling equipment in place of powder fillers. It means that plant superintendents can go nuts without half trying.

For over a hundred years, the soap business never changed. It was a nice comfortable business. But in the last twenty-five years, the whole world of detergents has been turned topsy-turvy. Liquid detergents are probably just another milestone in the dizzy pace of new things. What comes next is anybody's guess.

* * * * *

FLOOR CONSCIOUS . . . People everywhere seem to be more conscious of good floors than ever before. We suppose it's just a part of the over-all improvement in the general standard of living. This consciousness of good floors is as much a part of the industrial picture as in the home. In fact, it is in industrial flooring and its maintenance that we have a hunch the largest growth will come in the near future. The days of rough, dirty floors for industry, in plants, office buildings, institutions is fast passing.

The advent of better floors and better floor maintenance could bring something resembling a real boom to manufacturers of floor care products, be they paints, seals, waxes, cleaners or what not. New types of all of these products have to a degree replaced many older-type floor

Increasingly the product of choice...

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Here are the facts which have convinced so many leading manufacturers of soaps and cosmetics that G-11 is the most effective germicide and deodorant available.

Deodorant Action: Scientific studies have proved that G-11 remains on the skin even after washing. It therefore provides *continuous* control – between washings – of bacteria that cause perspiration odor.

Proof of Skin Degerming: 40 independent investigators agree that G-11 reduces the bacterial population of the skin by 95% or more. 150 scientific publications attest to its effectiveness. Over 95% of America's hospitals use it for surgical scrub and other purposes.

Consumer Acceptance: More consumers buy G-11 – Hexachlorophene – soaps than any other deodorant bar. Hexachlorophene is known to millions of people.

Soap Compatibility and Stability: G-11 is effective in *all* types – bar, powder, and liquid soaps and detergents. It is also non-corrosive, alkali stable, effective at all pH's.

Non-Irritation of the Skin: Established by its use in billions of cakes of soap and millions of units of cosmetic and pharmaceutical products such as lotions, oils, powders and ointments for babies as well as adults.

Quality: All production meets U.S.P. specifications.

Availability: Immediate shipment of truck or carload quantities from stock. Available around the world.

Technical Service: Sindar discovered hexachlorophene, holds the patents, pioneered its use in antiseptic and deodorant soaps, and is ready to assist you with your technical problems and to supply data on its varied applications.

SINDAR® Corporation
Industrial Aromatics and Chemicals

321 West 44th Street, New York 36, New York

care materials. Still newer and better products are bound to follow if history is any criterion. But, whether old or new, manufacturers, we feel certain, can look forward to a steadily increasing demand for such products for industrial uses.

To ride the current wave of floor consciousness, particularly in the industrial market, we feel that publicity efforts whether cooperative or by individual companies will pay good dividends in the year or two immediately ahead.

* * * * *

AEROSOLS? . . . More and more manufacturers are becoming conscious of the true meaning of the term, aerosol, and are calling our attention to this fact when we misuse the word. Obviously, products which emerge from a pressure package as a liquid, cream or foam are not aerosols. A true aerosol is a suspension of very fine solid or liquid particles in air or gas such as smoke or fog or mist. So when we refer to "aerosol" shave cream or hair dressing or tooth paste, we are technically off base, we must admit. But trade usage, it seems, has carelessly come to refer to anything in a pressure package as an aerosol and we have just followed suit.

Now, people who make or market a pressure packaged product seem to be getting more fussy. Only recently, we have had the error of our ways called to our attention again, this time by a large manufacturer who has just added his first pressure package to his line, a cream hair dressing. And if we go further, there is reason to believe that no commercial aerosol, including the spray products, are true aerosols. So maybe we should abandon the word altogether if we are going to be technically correct in all we say about pressure packages.

* * * * *

IMITATION . . . Imitation may be the sincerest form of flattery, but it seems to be the inevitable price of success in this era of whirligig marketing. A product as long as it stays more or less obscure and is willing to enjoy success in a small way ordinarily remains safe from large-scale imitation. But let it grow and become an important factor in its market, then imitation is apparently inevitable.

Witness the case of a liquid detergent containing a solvent and a strong pine odor. For almost twenty years, it was marketed quietly and in a relatively small way. Then a couple of years ago, its distribution expanded and it became a leading seller in a number of the major marketing centers. Its success immediately focused attention on the product and its market. The saliva started to flow in the mouths of other hungry marketers of kindred products. Imitation was just a matter of time.

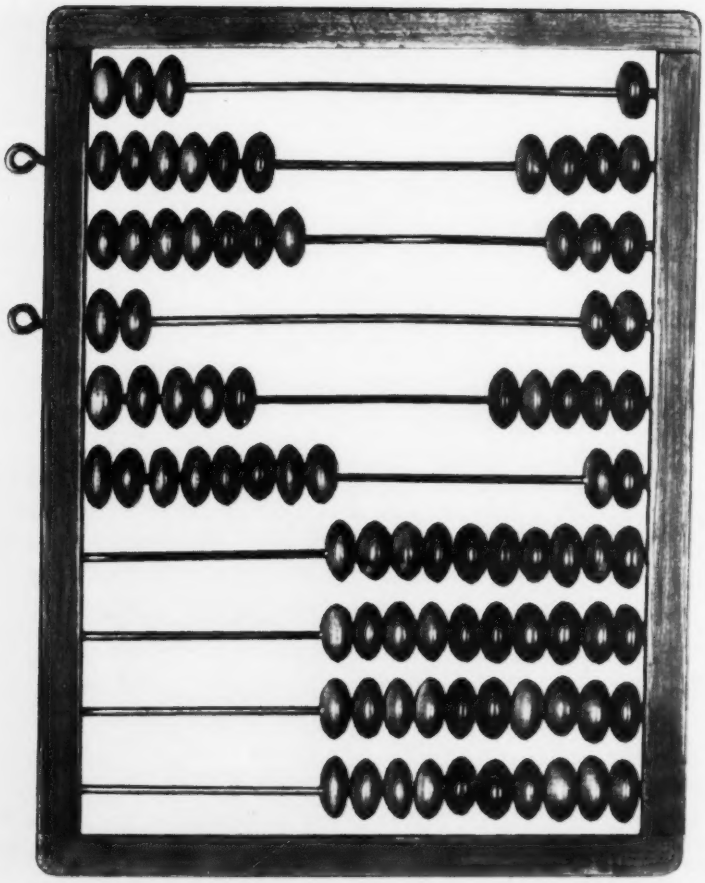
Three imitation products, we understand, have just recently hit the retail market and a couple more are being contemplated. And the imitators are not small fry. So it would seem that the maker of the original product made the serious mistake of becoming too large, too prominent. As soon as he became big enough, his neck was out a country mile and the imitation brigade is moving in.

* * * * *

INSECTICIDES . . . With the summer about over, we look back once again to see what sort of a season it has been for household insecticides. Between the heat, the humidity and rainfall which covered a large part of the nation for the better part of two months starting in June, all types of household insects, including mosquitoes, were unusually plentiful. It did not take an experienced insecticide salesman long to determine that sales had to be higher after three extremely poor years. Even before he saw the figures, he knew that business was looking up.

Now we have word that one of the newer arrivals in the field of household insecticides, a product which has been advertised widely, showed a sales gain as of early August of some 28 per cent. The average for the entire household and industrial insecticide field was probably close to 20 per cent. In addition to increased insecticide sales, the demand for insect repellents has shown an upward surge. This may in part be due to several new products on the market or it may be just a direct reflection of more bugs everywhere.

After three or four very lean years, insecticide manufacturers really had this one coming to them. But, as it has always been with insecticides, advertising falls on stony ground if there are no bugs around. Unfortunately, people don't buy insecticides until the bugs arrive.



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DISH-WASHING COMPOUNDS · RUG AND UPHOLSTERY CLEANERS · EMULSIFIABLE SOLVENT CLEANERS

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ONYX CHEMICALS
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Cable: OCCO Jersey City, N. J., U. S. A.

as the reader sees it . . .

Considerable Joshing

Editor:

There have been one or two occasions recently where an old picture of me was used with some reference to a current activity and I've had considerable joshing from friends who think that I have just released the photograph and am trying to conceal my true age.

I believe a year or so ago one of these old pictures appeared in your magazine but, in any event, I am attaching a more recent picture (see cut) taken within at least ten years. Will you please check your files and tear up anything earlier as this is the last photograph I have had taken and more nearly resembles me in my present old age.

Roy W. Peet,
Manager,
Soap Association
New York

We have destroyed all old pictures of Mr. Peet, including the one taken when he was graduated from high school and which we appear to have been using all these years without realizing how much and how well he has aged. Ed.

★

"Igepon" GAF Trademark

Editor:

Our attention was directed recently to the definition of "Persol 40," a product of the Berkshire Color & Chemical Co., appearing in the list of synthetic detergents in Soap & Chemical Specialties of March 1958, page 59, where said product is stated to be "an 'Igepon T' type detergent."

"Igepon" is a registered trademark of General Aniline & Film Corp., Registration No. 291,295, dated February 2, 1932 and, as such, designates products of this company rather than materials having special physical or chemical characteristics, as the afore-said definition of "Persol 40" would tend to suggest.

Use of "Igepon" in the manner of the "Persol 40" definition tends to destroy the trademark significance thereof and to cause it to degenerate into a common designation of compounds having special physical or chemical properties.

We are sure you have no interest in impairing our trademark rights in this way, and should greatly appreciate, therefore, assurance of your cooperation in avoiding such misuse of our "Igepon" mark in the future, as well as any steps you might be able to take to correct the present misuse.

We are making a similar request of Berkshire Color & Chemical Co., and should appreciate it if you would call this request to the attention of the author of the article in which the "Persol 40" definition occurs.

Walter F. Hensel,
Trademark Counsel,
Patent Department
General Aniline & Film Corp.
New York

★

Mask . . . Make . . . Miss

Editor:

We appreciate the mention you made of our new masking agent, "Diascent," in the July issue of Soap & Chemical Specialties. However, we are afraid there was a typographical error in the printing which will cause confusion among your readers.

Our release said that one pound of "Diascent" will odor-*Mask* 64 gallons of finished *formulation*. As the item appeared on page 135 of July Soap it read "one pound will make 64 gallons of finished *formulations*."

We would very much appreciate it if you would make reference to the product by its trade name, "Diascent."

M. Lemmermeyer,
President,
Aromatic Products, Inc.
New York

Done . . . sorry . . . Ed.

Roy W. Peet

★

Tect in Northvale

Editor:

Several months ago we sent you a notice informing you of our change of address to our new plant in Northvale, New Jersey. However, we still continue to receive material from you at our old address in Dumont, N. J.

Since this means additional delay in serving your requirements, we shall greatly appreciate your records to show our address as Northvale, N. J.

Jay Patrick,
Sales Manager,
Tect, Inc.
Northvale, N. J.

We are publishing the above form letter in case any readers of Soap & Chemical Specialties who are supplying this firm are still sending raw materials, equipment or containers to the old address. Ed.

★

Snyder Laboratories Move

E. B. Snyder Laboratories, Inc., manufacturers and distributors of soaps, cleaners, detergents, and chemical specialties, recently announced its move to a new location at 1220 Shackamaxon St., Philadelphia 25. The firm's new telephone number is Garfield 5-0266.

SEVEN KINDS OF *Duponol*® FOR ALL KINDS OF SHAMPOO

Have you met the DUPONOL family? Many of its members are popular with the shampoo industry and for two very good reasons: their diversity and their unique combination of properties.

Du Pont offers you no less than seven DUPONOL surface active agents. Each has a special application (see box). Whether you make cream lotion, paste or solid cream, clear liquid or dry shampoos, there is a DUPONOL to give you just the base for the job.

There is a DUPONOL that's just right for the pearlescent whiteness that sells cream shampoos. Another produces the mobile pearlescence seen only in good liquid cream shampoos. There is one that gives viscous shampoos the necessary body without the usual need for large quantities of a thickening agent. Different viscosities are available and there is a special DUPONOL for top-quality, luxury formulations.

Every DUPONOL removes grease and soils, and can be readily formulated into shampoos possessing other desirable qualities such as manageability and softness. Every DUPONOL has a bland, clean odor that readily lends itself to perfuming.

What member of the DUPONOL family are you most interested in? Drop a line to E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Dyes and Chemicals Division, Wilmington 98, Delaware. Please detail your own needs fully.

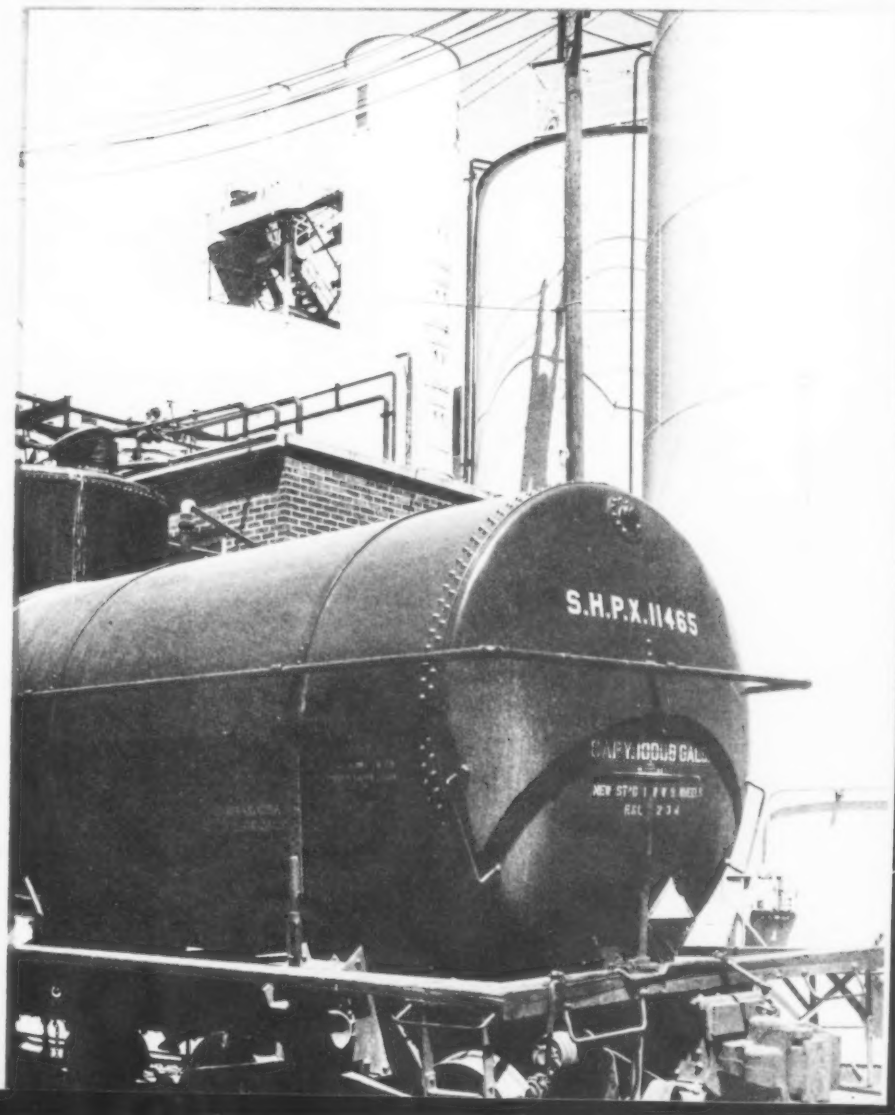
DUPONOL WA paste—for cream and paste shampoos
DUPONOL WAQ—for cream lotion shampoos
DUPONOL WAQ-A—for luxury liquid cream lotion, paste and solid cream shampoos
DUPONOL C—for dry shampoos and liquid cream lotion shampoos
DUPONOL EP—for clear liquid and liquid cream lotion shampoos
DUPONOL AM—for clear liquid and liquid cream lotion shampoos
DUPONOL XL—for premium-quality, clear liquid shampoos

DU PONT
REG. U. S. PAT. OFF.

Better Things for Better Living . . . *through Chemistry*

Detergents . . . cleansers . . . soaps

Procter & Gamble's first pilot plant for spray-drying of synthetic detergents, in Ivorydale, O., is shown above. P&G's product "Dreft" was the first household synthetic detergent to be marketed in the U.S. It was introduced in 1933.



- Aerosols
- Detergents
- Dishwashing compounds
- Floor scrubs
- Glycerine
- Hand cleaners
- Laundry soaps
- Liquid soaps
- Metal cleaners
- Potash soaps
- Scouring cleansers
- Shampoos
- Shave products
- Soap powders
- Starch
- Steam cleaners
- Medicinal soaps
- Textile detergents
- Toiletries
- Toilet soaps and other detergent and soap products

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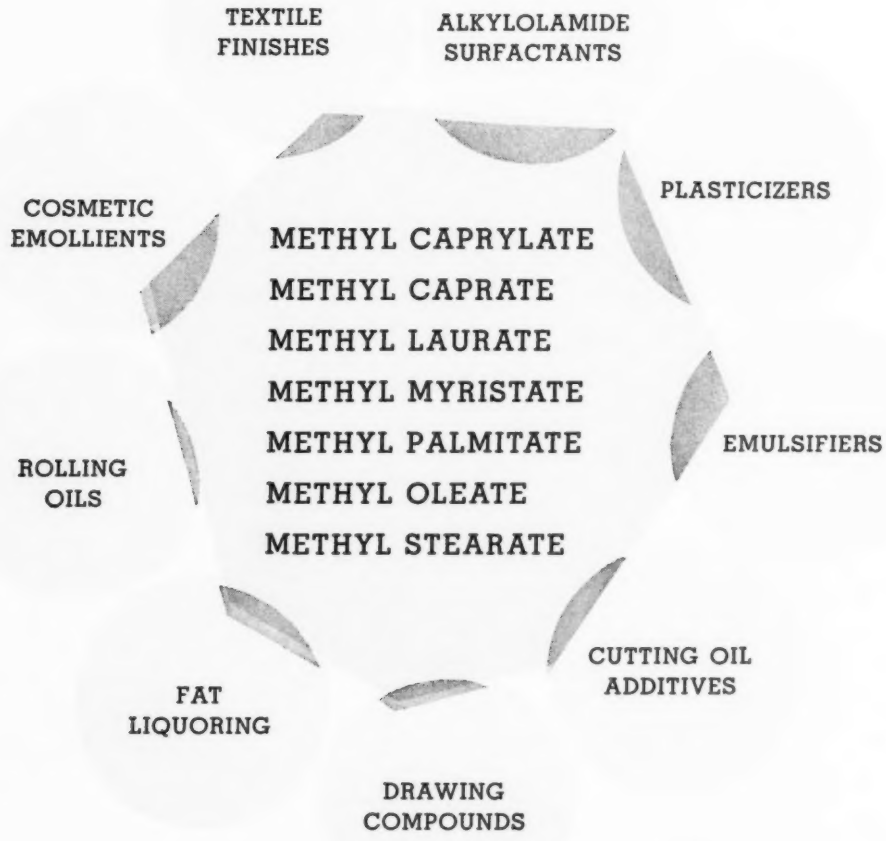
OFFER IMPORTANT ADVANTAGES AS INTERMEDIATES OR ADDITIVES FOR A WIDE RANGE OF APPLICATIONS

Methyl esters offer a number of important advantages over fatty acids as intermediates. In most cases methyl esters are more reactive . . . offering cost savings from that standpoint. Further, they are more fluid and considerably less corrosive than fatty acids. Many reactions involving methyl esters can be run in plain steel, eliminating the need for costly storage tanks and reactors.

The new Stepan plant at Millsdale, Illinois (near Joliet) is now producing in quantity a wide range of methyl esters of high purity and excellent uniformity. We would be pleased to furnish you with working samples, technical bulletin and prices.



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AMERICA'S MOST COMPLETE LINE OF SURFACTANTS

1933-1958—25th Anniversary of Household Synthetic Detergents

"dreft" Led the Way

...P&G's first synthetic detergent sparked soap industry revolution

TWENTY-FIVE years ago, Procter & Gamble provided the opening chapter to an amazing success story.

In 1933, Procter & Gamble perfected and began marketing "Dreft", the nation's first packaged household synthetic detergent washing product.

A quarter century later, packaged household synthetic detergents have revolutionized soapmaking, which dates back some 20 centuries.

Few, if any, persons realized in 1933 that synthetic detergents would gain such wide acceptance in this comparatively short time—so much so, that today more than 70 per cent of all washing products manufactured are synthetic detergents. Moreover, an estimated 90 per cent of all the packaged laundry and dishwashing products used in America's homes are synthetics.

In 25 years, synthetics have:

Changed washing habits around the world. In synthetic detergents, housewives saw the end of the age-old hard water washing problem. Synthetic detergents, unlike soap, did not react with the minerals in water and leave a film of insoluble lime-soap deposits on articles being washed.

Changed the soapmaking industry. Because the manufacture of synthetic detergents called for a wide range of new and different raw materials and chemical processes, they marked the start of a whole new industry for soapmakers. The search for new detergent products and processes intensified industry research. "Soapmaking" immediately increased in technical complexity. Buying habits were changed. Accelerated research and development made the industry, already one of the world's most competitive, even more competitive.

A 1933 newspaper advertisement spoke of the advantages of Procter & Gamble's "Drift" (later renamed "Dreft"), the nation's first household synthetic detergent. This advertisement reflected the educational work necessary to acquaint homemakers with this "soapless soap."

WELL, I NEVER
SAW SUCH
SUDS IN
CRAWFORDSVILLE
You couldn't believe your eyes and you said so when we first showed you DRIFT. Questions flew back and forth:
"What is this DRIFT anyway?"
DRIFT is a sensational new washing discovery—nothing like it has ever been made before. It looks like soap, yet it isn't soap.
"How does DRIFT work in hard water?"
If you try it, you'll find hard water feels like soft, pure rain-water when you pour in DRIFT. And such suds!
"Do I use it like soap?"
You sprinkle it into the water as you would soap—but you only use half as much. And NEVER use DRIFT with soap or water softener. They don't work together.
"What happens?"
DRIFT dissolves instantly . . . it rinses completely. If you watch, you will see there is no hard-water scum to cloud colors and roughen clothes. Colors come out bright, clear, and unfaded. Woolens feel soft and fluffy and silk stockings wear much longer.
"What can I use DRIFT for?"
Use DRIFT for silk stockings, silks and woolens—all washing, in fact. It will make your cut glass, silverware, and good china fairly sparkle. Try adding a little to your bath water—there'll be no ring around the tub . . . use it for your next shampoo, and notice how fluffy and lustrous it leaves your hair.
"Is DRIFT economical to use?"
Yes—because you only need to use half as much of it as you do soap. It makes your fine things wear longer, too. Do try DRIFT again today.
drift
drift
the wonderful
new way to wash silks and woolens

Procter & Gamble's "Dreft", designed for dishes and fine fabrics, proved to be the forerunner of the large number of household synthetic detergent products marketed since 1933. These newer detergents sprang from research to find the new advantages detergents offered, and were attempts to answer additional consumer needs. The myriad detergent products made available to consumers today by P&G and other manufacturers are indicative of this continuing research. For instance, after pioneering with "Dreft", P&G's research perfected these forms of synthetic detergents:

In 1933, "Drene", the first synthetic detergent shampoo for consumers. Women soon found that here was a shampoo that eliminated "soap film" which had left hair "dull" and "lifeless."

In 1946, "Tide", the first all-purpose synthetic detergent designed to do the entire family wash and a wide variety of other household tasks as well as the dishes. With the introduction of "Tide", P&G had a synthetic detergent with sufficient "cleaning muscles" to compete with heavy duty soap products in any household task, and leave clothes cleaner than soap products could.

Other synthetic detergent products introduced in subsequent years by Procter & Gamble in-

dreft dissolves instantly . . completely, even in cold, hard water . . rinses out like magic
Takes the place of soap and all water softeners
See the difference
What to use dreft for
Sweaters look new
Wash in cool water
Dreft saves money
Perfect for silk stockings
No hardwater soap scum

Unique advantages of Procter & Gamble's "Dreft" were explained to homemakers back in the early days of the product in material such as that shown above which was distributed along with free samples of the then revolutionary washing product.

dreft
NOT A SOAP
A wonderful new discovery for washing silks and woolens.
Makes 5 times as much suds as soap, 12 times faster.
. . . FREE PACKAGE . . .
Try this package FREE. Convince yourself that no soap you have ever washed with compares with this new startling discovery — DREFT.

Samples of "Dreft" were given to homemakers in three hard-water towns near Cincinnati.

cluded:

In 1949, "Joy", a liquid synthetic detergent for dishwashing and fine fabrics laundering;

In 1955, "Cascade", a detergent for automatic dishwashers;

In 1956, "Dash", a controlled-sudsing detergent for tumbler-type automatic washers;

In 1958, "Zest", a soap-detergent beauty bar with deodorant action.

In addition to these, P&G has introduced a variety of synthetic detergent products for industrial use, and during the past 10 years has marketed additional household washing products, shampoos, cleaners, cleansers and liquid detergents to meet specific consumer preferences.

Dreft's Early History

The introduction of "Dreft" 25 years ago was a direct result of P&G's exploratory research into new types of detergents. Throughout the entire soapmaking industry it was known that German scientists were working toward successful soap substitutes. From early German discoveries in 1916, and from scientific improvements in the 1920's, came a series of synthetic detergent products for industrial use. These were found to have unique washing, wetting and emulsifying properties. They did not form insoluble compounds with the inorganic salts of hard water; they exhibited washing action in either acid or alkaline solutions, and they were more soluble than the corresponding soap products.

Industrial users found synthetic detergents offered advantages in a variety of their operations. For instance, textile mills found them ideal for washing, dyeing and finishing all types of fabrics, because they could be used in a neutral, acid or alkaline dye bath, while soap could only be used in an alkaline bath. In the early 1930's, Procter & Gamble idea scouts investigated the synthetic detergent work in Germany, and shortly afterward the company was licensed to manufacture and sell alcohol sulfate synthetic detergents in the United States for household and laundry sales.

After more than a year of laboratory tests, P&G in 1933 introduced a spray dried granule detergent, "Drift" (soon to be renamed "Dreft") into three hard-water towns near Cincinnati.

Marketing Lessons

To promote "Dreft", an alkyl sulfate product, P&G instituted an extensive newspaper advertising and house-to-house sampling campaign. Introducing this radically new product obviously posed numerous completely new problems, and in solving these, P&G made decisions and gained experience in marketing that later affected every new product to be introduced into the detergent field.

The first and foremost problem was one of making homemakers aware of the demonstrable advantages offered by the new detergent. In 1933, women freely admitted that hard water created a constant washing problem, but they had learned how to get by with soaps they were using. How could they be convinced in their homes of the special merit of this new type of product, first called a "soapless soap?" How would they look upon its differences from soap? Even the water looked different from the soapy clouded water to which they had been accustomed.

P&G did everything possible to make the package and the product as familiar as possible. "Dreft" was made white and granular in form. The package was attractive, similar in size to soap packages, and had simple but complete washing directions.

P&G knew that women often judged the kind of job a washing product does by the amount of suds made. They could see that "Dreft" made more suds than soap and made them faster, and that it

helped solve all rinsing problems by leaving no hard water film.

"Dreft," because of its value in hard water washing, was first introduced in the hard-water towns of Oxford and Troy, Ohio, and Crawfordsville, Indiana. Special "Dreft" salesmen used two bottles to give a cold water sudsing demonstration in every store. Soap was in one bottle, "Dreft" in the other, and a quick shake showed the difference in suds between the two solutions. Sample swatches of material also were used to prove the no hard-water deposit and complete rinsing claims. In addition, every housewife in town got a full-size free sample of "Dreft."

In an article on "Sulfated Fatty Alcohols" in the April, 1934, SOAP magazine, the marketing of "Dreft" was noted:

" . . . Thus "Dreft" becomes a competitor of all laundry soaps, soap powder and flakes. . . . "

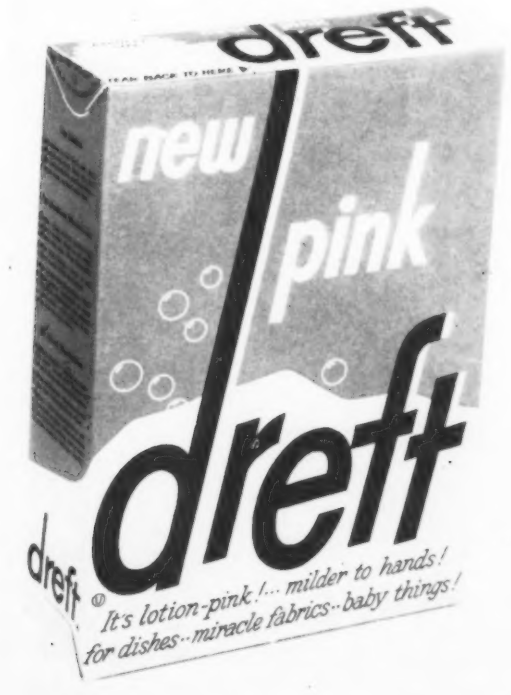
However, the article continued, "The limiting factor in the sale of the alcohol sulfates is their high cost in comparison with that of soap. The present price is four to five times that of soap. In certain cases, they probably effect a new economy and give enough better results to justify their price.

"Dreft packaged in the form of fine granules retails at 15¢ per 4 ounces. Even at this price there is a possibility that it may scoop the household market, particularly in certain sections."

After venturing this prediction, however, the author qualified with these comments:

"Whether all the claims made for the alcohol sulfates are justified, can only be determined over a period of time, as the products come into more general use. Naturally such information as is available at the present time comes from those interested in the selling of these products. Past experience indicates that such information ordinarily tends to be colored by optimism."

As word spread of this new "soapless soap," sales of "Dreft" were extended from market to market, with special attention given to hard water areas. P&G was well aware that the product was not suitable for removing heavy soil, and "Dreft" was not recommended for the family wash.



America's first household synthetic detergent as it is packaged today. It is still a favorite of many homemakers.

Soapless Shampoo

In the meantime, the same basic detergent material as in "Dreft" was incorporated into "Drene," a liquid shampoo, which gained immediate public acceptance.

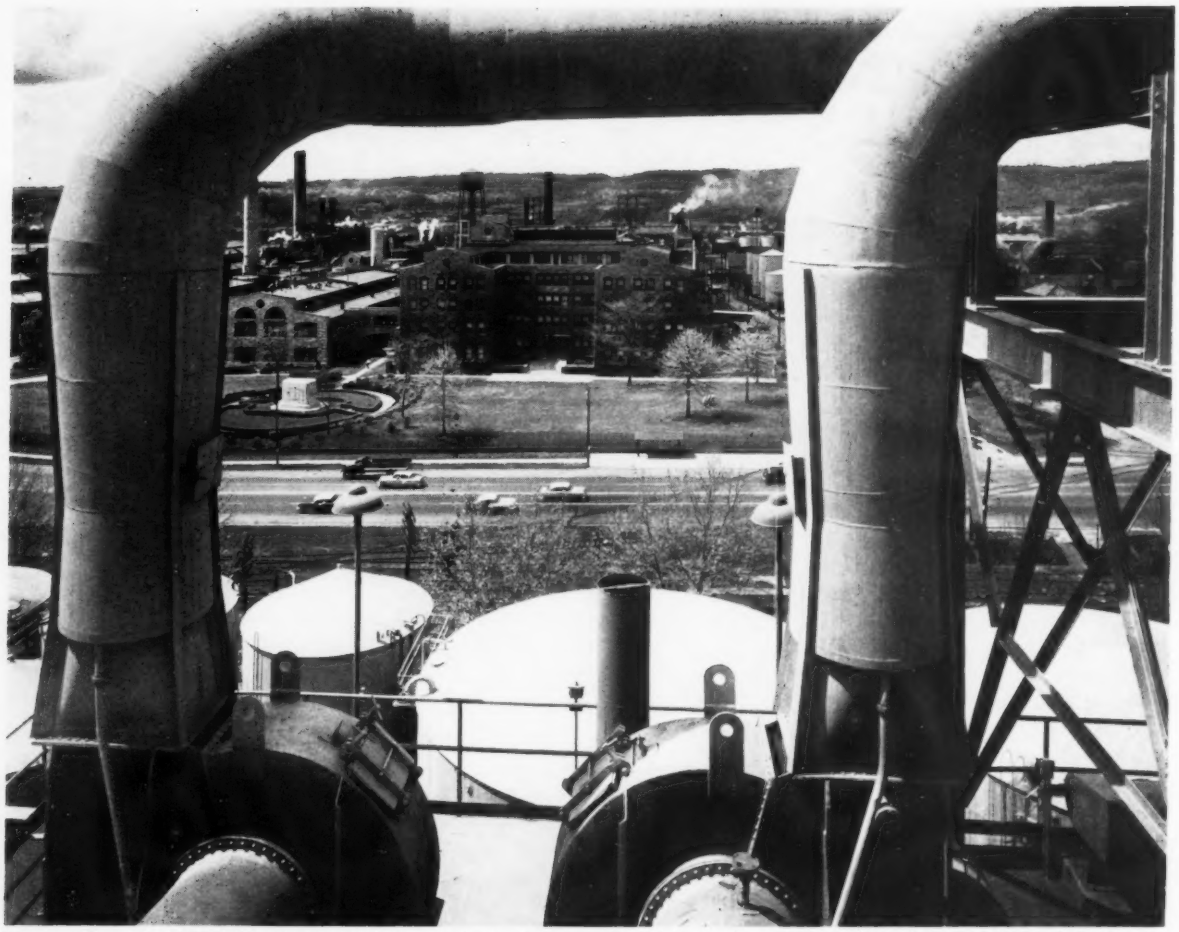
The biggest surge in the popularity of detergents, however, occurred after World War II. During the war the manufacture of detergents for home use was curtailed because of shortages of raw materials and production facilities, although laboratory investigation continued.

The search for an all-purpose detergent proved a long and arduous—but rewarding—task for P&G researchers. The cleaning ability of detergents, it was soon found, could be improved by adding builders which had been used in soap. However, they left clothes harsh and stiff, because they reacted with hardness in water to form granular insoluble materials; and part of these solids adhered to clothes. Sodium pyrophosphate, then relatively new as a bulk chemical, was found to improve the detergency of synthetics, but still left clothes somewhat harsh and rough. Obviously a new and better builder was needed.

Enter Tripolyphosphate

Only after long and painstaking years of work and testing was the right builder found: tripolyphosphate, then little more than a laboratory curiosity. P&G researchers worked long and hard to arrive at the correct proportion of builder to detergent and succeeded. It was found to be a good builder, effective in removing soil, and it left clothes soft and free of objectionable deposit.

Ironically, after the years of research toward an all-purpose synthetic detergent, P&G had to postpone production of it. Tripolyphosphate was not available in sufficient quantity and there were no plants



Pipes at Procter & Gamble's St. Bernard, O., synthetic detergent plant frame a view of the firm's Manufacturing Administration and Research Building and adjoining plant facilities at nearby Ivorydale. Findings of M. A. & R. researchers, supplemented by basic research at P & G's Miami Valley Laboratories near Cincinnati, aided in formulation and subsequent improvement of many of the household synthetic detergents on the market today.

in which adequate amounts could be made. Another problem was that P&G lacked specialized processing equipment needed to manufacture its new discovery. Moreover, World War II was in progress, which restricted the construction of needed facilities and the availability of needed manpower and raw materials. Plans for marketing were shelved until the war's end.

In 1946 Procter & Gamble began marketing "Tide," the world's first all-purpose synthetic detergent. Its success was overwhelming, and for many years its sales were limited only by P&G's ability to produce it. Today it is still the largest selling synthetic detergent in America.

Even after "Tide's" success, P&G has had new detergents emanating from its laboratories. For instance, "Cheer," in 1952, offered increased "whiteness" from its formulation. In the transition from soaps to synthetic detergents, even several old stand-bys in Procter & Gamble's product family took on new detergent forms. "Oxydol" (marketed since 1928 by P&G) appeared as a detergent in 1952. Similarly, "Blue-Dot Duz" detergent (a companion to the familiar "Duz" Soap which dates back past 1929) was introduced in 1956. In 1957 P&G introduced "Ivory Liquid," a detergent carrying the name of the company's familiar "Ivory" brand.

Industry-Wide Changes

In a sense, these product changes reflect the vast industry-wide changes caused by the synthetic detergent revolution. New raw materials were needed to supply the detergent products demanded by consumers. New chemical research, new kinds of machinery, plants and processing resulted from the detergent revolution.

One synthetic was available to consumers in 1933; an unknown number (but estimated at more than 200 household synthetic detergent washing products) are sold today.

"Soapboiling," an ages-old art, decreased in importance, as producing detergent products tended to shift the "soapmaking industry" more into the category of chemical processing.

For P&G, as well as other soapmakers, these changes did not come easily or cheaply. A casualty

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1933-1958—25th Anniversary of Household Synthetic Detergents

Growth of the ANIONICS

By O. M. Morgan and Leslie C. Wizemann

Director, Chemical Sales Product Manager, Detergents,
National Aniline Division, Allied Chemical Corp., New York

THE growth and development of the anionic synthetic detergent over the past 25 years is a success story far beyond the fondest dreams of the early chemists, and the visions of those responsible for its manufacture. In the short period of a quarter-century, we have witnessed a revolution in the cleaning and washing of clothes, eating utensils, processing of textiles, and now, in personal hygiene. This revolution has changed the daily living habits of all.

It will be some time before the final story can be written, for these changes are still continuing. New products, new applications, and new manufacturing facilities are announced almost daily. No one can predict when the ideal detergent combination will be evolved.

O. M. Morgan

It is not a matter of simply replacing soap with the so-called synthetic detergents in both industry and the home. Rather, it is a technical transformation which has resulted in more leisure time for the housewife and new methods and procedures for industry. Since synthetic detergents utilize the hardness present in most water supplies in the cleaning process, there is no waste from insoluble sticky curds as with soap. In consequence, our clothes are cleaner, brighter and more attractive, at a lower cost.

What is the present status of synthetic detergents? What is the future for the soap producer? Why have synthetics replaced the familiar soap powders on the grocery and supermarket shelves?

The most recent statistics released by the Association of American Soap and Glycerine Producers, Inc., show that synthetic detergents are 72 per cent of all the detergents produced, including soap, and comprise more than 90 per cent of the detergents in household packaged cleaning items.

As shown in Figure 1, the growth of synthetic detergents is startling. Starting in the early 1930's, the growth curve is smooth and shows a slow, constant increase until the 1940's. The sharp upward sweep is indicative of the rapid acceptance by the American housewife and industry of synthetic detergents. The two curves spell out this acceptance of synthetic detergents in replacement of soap far more clearly than words.

The textile industry was one of the first to adopt synthetic detergents because of certain disadvantages of soap. Fatty acid soaps were used for years, for soap is a surface active agent whose origin is lost in the past. But soap is efficient only under ideal conditions. As practically all water supplies contain calcium and magnesium salts, soap forms insoluble "lime soaps." Also in mildly acid solutions, soap decomposes to form the fatty acid. The textile industry requires fabrics free from residues that lead to poorly dyed and rejected goods. The improved synthetic detergents offered a solution to these difficulties at low cost.

The first synthetic deter-

L. C. Wizemann

gents sold in this country were made from fatty alcohols derived from expensive vegetable oils. It was soon evident that less costly products were required. The answer to this problem came from the now National Aniline Division of Allied Chemical Corporation, which developed an ideal synthetic detergent from a relatively low-priced petroleum base and coal-tar derived benzene.

This new product possessed excellent washing ability under all conditions of use. For the first time, a low cost all-purpose detergent was available at a price competitive with soap.

The desirable properties of this low-priced, mass-produced, petroleum base synthetic detergent became evident when a household package was introduced to the American housewife, and was readily accepted. Already established, especially in the Mid-West hard water areas, were fatty-based oils and alcohol synthetics, and these were later formulated to include the petroleum-based products. The petroleum industry contributed to the growth of synthetic detergents, through their interest in petrochemicals, the development of a propylene hydrocarbon and benzene. Today, it is estimated that the bulk of household packaged items contains a propylene polymer supplied throughout the world by the petroleum processor.

Packaged Detergents

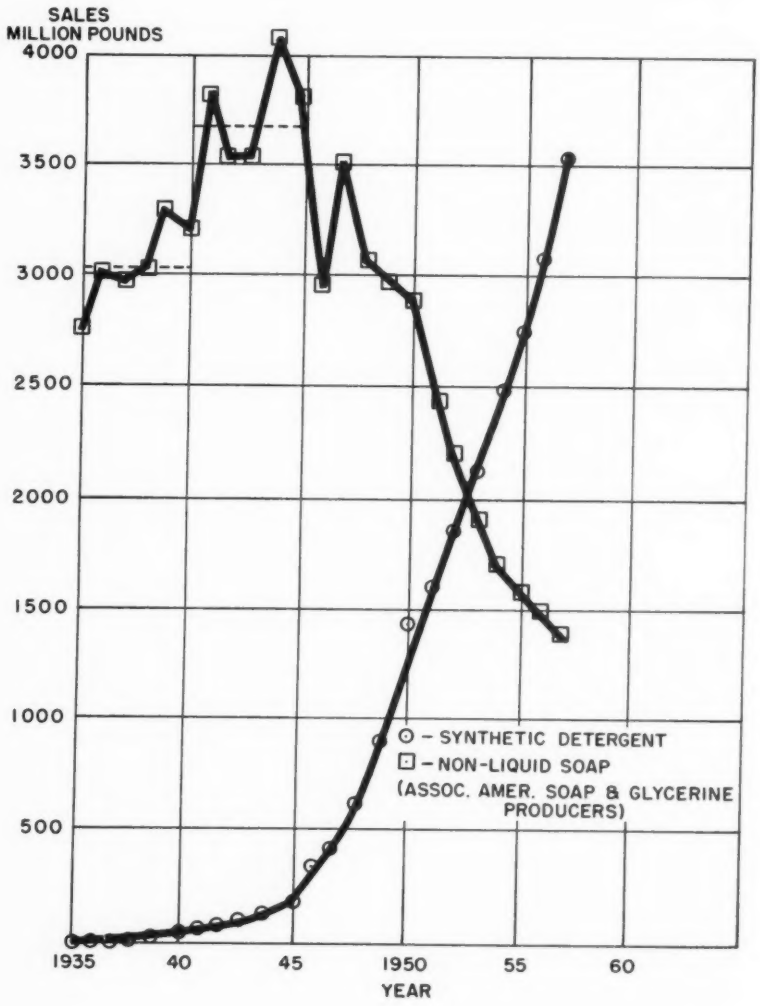
The packaged detergents were first introduced into the American home as a neutral product, suitable for washing dishes, woolens and as a "bubble bath" to eliminate the "bath tub ring." Soap continued to be used for washing cottons, until the discovery that complex phosphates in combination with the synthetic detergents were equal to soap.

The disadvantages usually associated with soap and accepted by the housewife, because nothing better was available, could now be replaced by products which result in clean, odor-free garments, free from soap residues.

These "built detergents"—neutral synthetics with added alkalies, are now more efficient as a result of continued research by the alkali manufacturer, detergent manufacturer and compounder. The "built detergent" manufacturer, by offering a heavy duty products, replaced bar laundry soaps and powders because the housewife soon realized that a superior product was available in a package similar to the previously purchased items. The soap companies recognized the potential sales appeal of a new detergent used as a soap, and through various advertising media, developed large consumer demand in a short time.

Liquid detergents have met with favorable consumer appeal, not by replacing soap as the built synthetics replaced soap, but in creating a market based on convenience of use. Both the "light duty" and "heavy duty" types of liquid detergents are replacing the dry packaged products. The sight of a plastic or steel container in the kitchen is not unusual today.

The highly competitive nature of the soap industry has resulted in research in cooperation with the chemical and synthetic detergent manufacturer designed to improve existing products and to develop suitable items for a specific use. Fatty condensation types of surface active agents have been developed specifically as a re-



sult of the introduction of liquid products. Although not unknown to the chemical industry before, the potential market demand initiated studies that produced improved materials more suitable and more efficient for liquids.

Research Continues

Research investigations continue in private and governmental facilities throughout the country. As a practical indication of this concentrated research, tallow-based synthetics and tall oil derivatives have appeared as "low foaming" detergents designed for laundry and dishwashing applications where excessive foaming is a problem.

Further improved packaged liquids will be marketed, containing better whitening agents or optical bleaches. More soluble complex phosphates and sufficient mixtures of solubilizers, and specifically formulated synthetics will be available.

It had been believed that the toilet bar of soap would successfully resist the inroads of synthetic detergents. Over the past years, little change has been noted in the familiar soap cake, except that certain products designed to inhibit bacteria growth have been added. Now, however, several toilet bars based on synthetic detergents have appeared and are available to the consumer.

The U. S. Armed Forces, because of the shortage of coconut oil during World War II, authorized the development and production of a synthetic detergent in bar form, and the first full scale manufacture was successfully demonstrated. When the scarce coconut oil again became available, the synthetic salt-water soap had proved its value to clean so effectively, in all waters, that no further purchases of the old coconut soap have been authorized.

Admittedly, the early synthetic bars had disadvantages, but the recently introduced products are reported to be equivalent to a good milled toilet soap cake.

There is no doubt that continued research will produce a synthetic bar that will out-perform, and out-last soap cakes, by many times. An all-synthetic item containing additives of proven value to condition the human skin may be the result of these attempts to invade the last stronghold of soap.

Research continues a never-ending search to develop new and improved synthetic detergents. These will be designed for specific applications and will possess exceptional physical and chemical properties. New anionic detergents based on natural sugars are expected to enhance our foods and pharmaceuticals, where low toxicity is a prime requisite.

Detergents will, by combination with antibiotics or chemicals, reduce or eliminate dental caries and objectionable skin disorders, and we can anticipate a wide array of pressurized containers of synthetic detergent formulations, in our time, in ever-increasing numbers.

Detergent, Soap Sales Up in Second Quarter

FACTORY sales of soaps and synthetic detergents during the first six months of this year are only slightly (1.3 per cent) below the record total reported for the corresponding six months of 1957. A 4.1 per cent increase in sales during the second quarter of 1958 compared with 1957 almost compensated for the drop in the first quarter of this year.

Most prominent growth items on the list are still in the liquid synthetic detergent group. Tonnage sales during the first half of 1958 of liquid synthetic shampoos are up 73.7 per cent and of other packaged liquid syndets up 30.3 per cent over the first six months of last year.

Released by the Association

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Sales of Soaps and Detergents—1st Half of 1958 and 1957

	Pounds		Dollars	
	1958	1957	1958	1957
Soaps other than liquid	523,933,000	572,991,000	143,877,000	150,071,000
Liquid soaps	1,783,000*	2,111,000*	2,710,000	3,230,000
Total	538,197,000	588,138,000	146,587,000	154,105,000
Bar toilet soaps, incl. mechanics	255,276,000	252,952,000	84,777,000	83,011,000
Laundry bars, white	61,515,000	68,054,000	12,519,000	13,282,000
Laundry bars, yellow & other than white	19,399,000	23,793,000	2,354,000	2,674,000
Soaps chips and flakes, pkgd.	18,392,000	23,077,000	6,252,000	7,681,000
Soap chips and flakes, bulk	40,575,000	50,798,000	4,875,000	6,095,000
Soap, granulated, sprayed pkgd.	67,783,000	82,444,000	19,863,000	22,366,000
Soap, granulated, sprayed, bulk	34,819,000	41,262,000	4,277,000	5,008,000
Washing powders, pkgd.	765,000	1,141,000	86,000	114,000
Washing powders, bulk	5,467,000	7,116,000	529,000	654,000
Hand pastes	2,406,000	2,427,000	281,000	276,000
Hand powders	2,907,000	3,665,000	474,000	599,000
Paste and jelly soaps	6,387,000	7,549,000	929,000	1,056,000
Shaving soaps	1,118,000	1,540,000	707,000	1,047,000
Shaving cream	6,611,000	6,483,000	5,864,000	6,083,000
Liquid soaps, other than pkgd. shampoo	1,768,000*	1,854,000*	2,611,000	2,760,000
Soap shampoo, liquid, pkgd.	15,000*	257,000*†	99,000	470,000
Misc. or other soaps	90,000	125,000	513,000	690,000
Detergents, solid	1,224,936,000	1,241,965,000	273,969,000	264,537,000
Detergents, liquid	202,344,000	161,592,000	75,328,000	59,111,000
Total	1,427,280,000	1,403,557,000	349,024,000	323,648,000
Detergents, solid, pkgd, other than shampoo	1,157,403,000	1,116,558,000	260,996,000	247,527,000
Detergents, solid, bulk, other than shampoo	61,340,000	116,255,000	8,736,000	11,673,000
Detergents, liquid, pkgd. other than shampoo	21,275,000*	16,331,000*	63,523,000	50,046,000
Detergents, liquid, bulk, other than shampoo	3,207,000*	3,401,000*	3,831,000	3,572,000
Detergent shampoos, liquid	6,488,000	3,736,000	7,974,000	5,493,000
Detergent shampoos, solid	6,193,000	9,152,000	3,964,000	5,337,000

*Expressed in gallons.
†Open to question. Use dollar values for purposes of comparison.

1933-1958–25th Anniversary of Household Synthetic Detergents

NONIONICS....Detergents with

ALTHOUGH synthetic detergents as retail products in U.S. date back 25 years to the introduction of "Dreft", industrial applications of these materials antedated this event by probably another 15 years. In fact, the basis of the present day industry may be traced back 50 to 75 years, depending upon one's definition of a surfactant.

Early research concentrated on developing products which foamed well and in this respect were similar to soap. The three types of products most often associated with this stage of the development were alcohol sulfates, alkyl aryl sulfonates and sulfated substituted amides. These are all anionic products. The fatty alcohol sulfates formed the basis of the early American product mentioned above. In Europe, the tendency was to favor the substituted amides. It was not until after World War II that the alkyl aryl sulfonates came into their own with the introduction of a highly purified dodecyl-benzene as a base raw material. Their present use overshadows all other types.

Nonionics were not given serious consideration as a detergent raw material for retail use ten years ago. There was a strong feeling at that time against any product which did not foam well and the nonionics are not in themselves great foaming agents. This attitude is changing, however, and provides a paradox unequalled in previous detergent history. Not only are built nonionics being sold as low sudsing retail products but nonionics are also being used as foam builders in the anionic class of products. The situation is somewhat clarified if we state right at this point that nonionics exist in many chemical forms and the ones being used as foam builders are not the ones used as foam suppressors.

That nonionics are playing an increased role in the retail detergent field is obvious to anyone in touch with present advertising trends or conversant with present retail formulae. Just how important this field is becoming and what tonnages may be expected for certain types of nonionics is a question on which we will try to throw some light.

An examination of production data is not very helpful because it is hard to differentiate between the normal growth of nonionics in industrial fields and their counterpart retail use.

Table I presents comparative data over a number of years on the nonionics in three categories as taken from the Tariff Commission reports.

In 1949 nonionics of the classes named represented only 10 per cent of the total production. By 1957 these products represented one-fourth of the total. Total synthetics almost tripled in this period but nonionics increased more than six times or at more than twice the average rate.

Nonionics Vary Widely

Nonionics differ very greatly from one another. The cyclic products, for example, contain the alkyl phenol ethylene oxide condensates which were first placed on the retail market about 1947 as a liquid type cleanser. The product was not satisfactory from a foaming point of view and was subsequently changed to that of an anionic. Type products of this nature, however, have good deter-

TABLE I

Figures Are Rounded to the Nearest Million Pounds

Year	Total Surface Active Agents Millions of lbs.	Cyclic Esters & Ethers Millions of lbs.	(1) %	Acyclic Esters & Ethers Millions of lbs.	(1) %	Nonionics* Nitrogen Containing Acyclic Millions of lbs.	(1) %	Total of lbs. Millions	(2) %
1949	430	15	33%	14	31%	16	36%	45	10%
1950	676	30	39%	20	25%	28	36%	78	11%
1951	693	26	36%	20	28%	26	36%	72	10%
1952	741	27	27%	36	36%	37	37%	100	13%
1953	922	42	25%	70	42%	53	33%	165	18%
1954	1026	42	22%	88	47%	57	31%	187	18%
1955	1153	72	30%	101	42%	65	28%	238	21%
1956	1148	79	29%	114	43%	70	28%	263	23%
1957	1206	84	28%	134	45%	79	27%	297	25%

(1) Percentage of total nonionics.

(2) Percentage of the total production.

*Nitrogen containing nonsulfonated cyclic compounds are omitted. On the other hand the acyclic nitrogen compounds contain cationic quaternary products of this class.

a Very Bright Future

By
John W. McCutcheon
John W. McCutcheon, Inc.,
Consulting Chemist-Chemical
Engineer, New York

gent properties with respect to liquid soil such as grease and oils. Their steadily increasing use must be attributed more to varied industrial applications than to retail sales.

The use of nonionics has expanded for emulsifiers for metal cleaning operations, agricultural sprays, and as ingredients in household type emulsion products such as insecticide sprays, floor cleaners, etc. This last includes an intermediate retail market which undoubtedly consumes many million pounds of these products for purposes not wholly dependent on their cleaning power.

The second class of product shows an increasing growth at the expense of both cyclic ethers and nitrogen containing acyclic products. Part of this increase may be due to the fact that prior to 1953, some of these products were listed under plasticizers. These products include the ethylene oxide condensation products of tall oil, which are important as raw materials for household detergents.

The first built powder based on such a nonfoaming nonionic was "All", marketed originally about 1947 by Detergents, Inc., of Columbus, O., subsequently manufactured by Monsanto and more recently by Lever Brothers Co. This product in the beginning had a a small but persistent sales record. It was aimed at the market for detergents in automatic washers as a product which would not foam over the top and impair machine operation. Other products of similar nature have appeared within the past half dozen years until nearly all major companies have at least one non-sudsing type powder on the grocer's shelf.

A subtle change in advertising methods points out that low sudsing products do not have foam which *"interferes"* with smooth machine operation. Low sudsing household detergents for automatic clothes washers are estimated to consume approximately 55 to 60 million pounds of base surfactant per year.

Acyclic Compounds

The third class of product—the acyclic nonsulfonated nitrogen compounds—includes the ethanolamides of coconut oil. These were early found to be particularly useful as foam boosters for the alkyl aryl sulfonates. The acyclic materials are detergents in themselves and their addition to built spray dried formulae has become common practice. This boosting of detergent power of an alkyl aryl is not alone confined to the alkylolamides but is also a property of certain class 2 nonionics such as the ethylene oxide condensates of fatty alcohols and acids. It is estimated that approximately 45 - 50 million pounds a year are presently being used as foam boosters in detergent products. Liquid detergents, which now represent over 10 per cent of

American Can Co. photograph

total detergeat sales, would take a large portion of the annual output of foam boosters.

New Uses of Nonionics

Newer uses for nonionics are as a binder for synthetic toilet bars and as an ingredient of heavy duty liquid detergents. Both types of product are now firmly established on the market and bid fair to become products of major importance within a few years.

In conclusion it should be pointed out that nonionics, as a class, have an extremely important future. Their range of uses in small package products includes such products as built powders, in which they are used alone; low sudsing products or those in which they are used to enhance detergency, stabilize foam or provide antidusting properties; or to increase the solubility of anionics to give greater cold water detergency. Probably 100-110 million pounds are presently being used for these purposes.

The price of some of these products is competitive with the best types of anionics.

In addition, in synthetic bars and liquid detergents, particularly the newer heavy duty liquids, use can be made of non-

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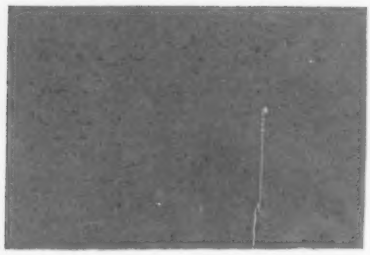
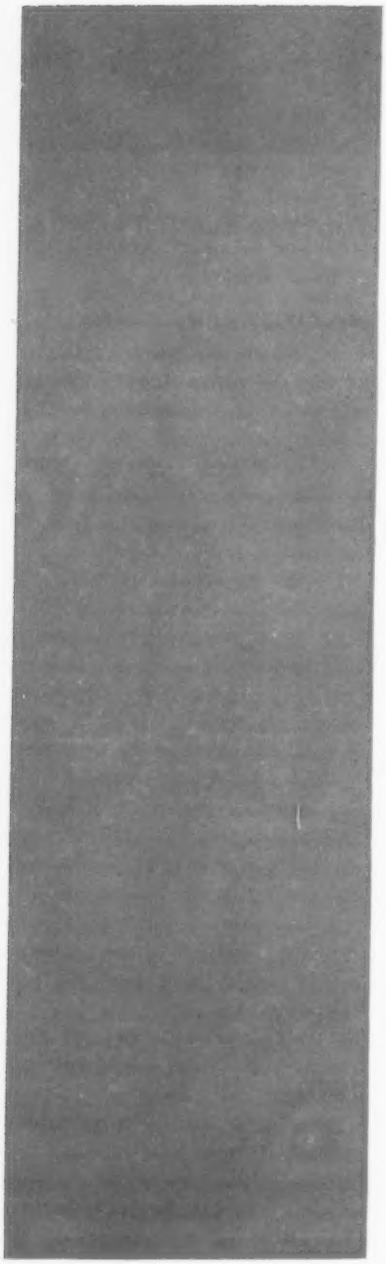


1933-1958—25th Anniversary of Household Synthetic Detergents

Amphoteric Surfactants



AMPHOTERIC surface active agents are compounds combining within themselves both anionic and cationic chemical groups and properties. Theoretically they act more like anionics in the alkaline range and in the acid range resemble cationics. But this is subject to considerable variation depending on their chemical structure. The descriptive label "amphoteric" was adapted by me from inorganic chemistry where it has been employed to describe such elements as aluminum. This metal is capable of functioning as a cation, as in aluminum chloride, or an anion in sodium aluminate. The word amphoteric replaces the jaw breaker Zwitterion which is not easily pronounceable, even for a German, and is a real tongue twister for the Anglo-Saxon tongue.

From time to time the word "ampholite" has been applied descriptively to these products, representing a contraction of amphoteric and electrolyte. This description appears to be redundant and confusing; redundant inasmuch as every salt is an electrolyte and certainly nobody would want to describe, for instance, an anionic surfactant as an anionic electrolyte; confusing because in our general field "electrolyte" is used to describe inorganic salts as employed in compounding.

Not infrequently the description amphoteric has been misused by application to products which definitely do not fall into the class as, for instance, cationic products with an ethoxy chain, the reasoning being that such products could react cationically and nonionically. This is fallacious, of course. The nonionic group can attenuate the cationic group but obviously since it has no ionic activity it can not eliminate an existing charge.

There are a number of suppliers of amphoteric surface active agents such as Miranol, Antara, General Mills, Armour, Du Pont, Goodrich, Canadian Development Co. and Goldschmidt in Germany. Some of these suppliers as well as some others are in semi-commercial production only. Most of the amphoterics offered by these suppliers are of distinctively different chemical structure and, therefore, their chief applications cover many different fields and are not readily interchangeable. Some of these variations I would like to discuss in greater detail.

Amphoteric Variations

Unlike any other group of surface active agents, the amphoterics embrace compounds that have little resemblance to each other. The only thing that they all have in common is one or more cationic and one or more anionic groupings. When these two types of groups are of exactly equal value, we are dealing with a balanced compound that in many ways behaves like a nonionic but which has a number of advantages over them. These will be discussed later.

In the acid range this type

*Paper presented during 44th annual mid-year meeting, Chemical Specialties Manufacturers Assn., Cincinnati, May 20, 1958.

By Hans S. Mannheimer*,

Miranol Chemical Co.
Irvington, N. J.

of compound will behave more like a cationic; in the alkaline range it is more like an anionic without, however, completely assuming the character of these ionic agents. When one of these ionic properties is strengthened or weakened, either by a change in position in the molecule or in the number of groups, the character and behavior of the compound are altered completely. If the cationic groups are strengthened through close adjacency to the lipophilic group or through the presence of several amine groups, the product becomes cationically oriented. It behaves like a weak cationic compound and shows anionic properties only in the very high alkaline range.

In the normal application range these products have very limited detergency properties. On the other hand, their substantivity is high and, therefore, they lend themselves to many of the applications of the true cationics but without their limitations as to solubility and compatibility. If the anionic properties are strengthened through close proximity of one or more carboxylic groups to the lipophilic group, the use of a sulfo group or the removal of the amine group to a side chain, compounds are obtained which behave essentially like anionics. Cationic properties are only obtained in the low acid range. Their compatibility with cationics, for instance, is limited to a pH well below 7. It is, therefore, no surprise that their commercial utility is very limited because they differ so little from the true and often lower priced anionic products. Furthermore, the demand is small for products with cationic compatibility only in the acid range. It can be seen quite readily that the balanced amphoteric is by far the most valuable and versatile one because its utility range is wider than that of the singular oriented compound with its utility limited to one range or the other. While the balanced amphoterics are the most valuable types, the potential number of other amphoteric surfactants which could be constructed is truly staggering. Just consider that every anionic compound can be turned into an amphoteric by introduction of an amine group! These compounds can again be varied chemically as well as in their utility by introducing more than one amine group or by changing its position in the molecule. Every cationic compound, on the other hand, can be turned into an amphoteric by introduction of an anionic group or groups in a variety of positions each such variation resulting in potentially very different compounds.

The nature of an amphoteric surfactant, whether balanced, cationically or anionically oriented, is easily recognized even in the absence of any chemical information by determining the area of the isoelectric point. For a balanced compound the isoelectric point is, of course, pH7. For a cationically oriented compound the isolectric point has a higher pH, for an anionically oriented compound a lower pH. Above this pH the compound reacts more anionic, below more cationic, at the isoelectric point both properties are of equal strength.

The significance of this becomes clear with the following consideration. Suppose you want to formulate a hand dishwashing compound with a pH of 8 and you want to use an amphoteric which you have on hand. You determine its isoelectric point by a method to be described later and find it to be 9. 5. It is then clear that this compound at pH 8 reacts cationically and is, therefore, not well suited for this purpose. To determine the isoelectric point all that is needed is: an electric pH meter, a solution of hydrochloric acid and one of sodium hydroxide. The first step is to determine the pH. For the sake of example, let us assume it is 9.5. The sample is heated to 50°C. and hydrochloric acid is added dropwise with agitation. Next, make a mental note of the speed with which the pH is lowered and observe the point at which the hydrochloric acid causes only an insignificant pH change. This is the beginning of the isoelectric point area. Continue adding hydrochloric acid until the pH drop speeds up again. This is the end point of the area. The isoelectric point is roughly the center of this area. For instance, the first point is pH 8, the second pH 6, then the

Prospects bright for amphoterics (compounds that combine within themselves anionic and cationic chemical groups and properties.) Sales are small because of their late start.

isoelectric point is approximately 7. This is a balanced amphoteric.

In another example, the amphoteric has a pH of 7. Acid is added, as described before, and it is found that the pH drop is rapid and continues with the same speed. Therefore, the isoelectric point is above 7. To a fresh sample of this compound, caustic soda solution is added and the same observation is made as before. It is noted that the pH rise slows at pH 9 and becomes rapid again at pH 10.8. In this case the isoelectric point is approximately pH 10. The product is an unbalanced, cationically oriented amphoteric.

It has always seemed strange that the potentially largest group of surface active agents has been so long neglected inasmuch as new facets of their amazingly broad spectrum are discovered constantly. The first amphoteric surface active agents postdate the anionics (not counting sulfated oils) by only a few years. The earliest patent on record in the United States is Platz & Holsten Appl. 1934, U. S. Patent No. 2,097,864, Nov. 1937, an I. G. Farben development. The first patent of a product developed in this country, Downing & Johnson, Appl. 1935, U. S. Patent No. 2,129,264, Sept. 1938, a Du Pont development and, yet, until 1947, when I applied for patents which were issued in 1950 as Nos. 2,528,378-9-80, I do not know of any serious effort having been made to market an amphoteric surfactant.

Because of the many variations possible in the structure and behavior of amphoterics, as has already been pointed out, it is not possible to say: "Amphoterics do this and that." While there are some reactive properties common to all, but with varying intensity, there is not a single behavior characteristic that can be assumed to be present in one amphoteric because it happens to be present in another. To cite a few examples, just as there are considerable variations in toxicity and irritation properties, solubility, electrolyte and acid and alkali tolerance or emulsification properties among a number of anionic or cationic surfactants, the same variations are present in amphoterics only in much larger degree because of the infinitely greater measure of possible structural variations. For instance, two products of essentially only minor structural difference, but one containing secondary amine and the other tertiary amine, may show one to be a serious skin irritant while the other is not.

I will confine myself to the amphoterics with which I am most familiar, namely my own, and mention only some of the outstanding characteristics of others.

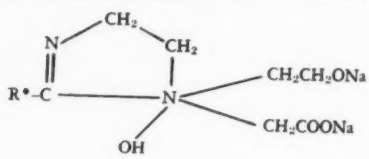
For instance, in a single compound such as the sodium salt of substituted lauroyl cycloimidinium dicarboxylate* the most fantastic combination of properties is available. (See cut below) If you picked a dozen other surface active agents, each one best suited for an individual use, it would still be impossible to even approach the performance of this product in most of these areas. It is non-toxic and non-irritating to human skin and eyes and an outstanding foamer used extensively in the cosmetic and pharmaceutical field either instead of or in combination with sulfated alcohol. The latter lacks the non-irritating and skin and hair conditioning features which the amphoteric possesses, yet this amphoteric can even impart these properties to the sulfated alcohol in mixtures. This same compound is used as a replacement or partial replacement for nonionics because it can provide good foaming properties where they are desirable. In mixtures with quaternary germicides it adds to the phenol coefficient rather than detracting from it. It permits the formulation of compounds containing considerable amounts of alkalies while the tolerance of the nonionics is very small. It imparts grease and soil lifting properties while the nonionic, as most other surfactants, must dissolve them to operate. While the nonionic is very efficient in this respect, the amphoteric is quicker since it is obviously easier to lift soil in its entirety than laboriously to dissolve it. Last, but not least, the amphoteric imparts all such properties to the nonionic in mixtures. Furthermore, it keeps the nonionic in solution at or near the boil. As a partial replacement for cationics, this amphoteric changes the greasy hand of the cationic on fabric or hair and imparts rinsability, offsetting the gradual waterproofing effect of the cationic household fabric softener.

Furthermore, this amphoteric surfactant proved suitable for uses never before possible as, for instance, in the formulation of clear liquid products containing high amounts of alkali and/or electrolytes for heavy duty cleaning, especially heavy duty steam cleaning compounds. With it com-

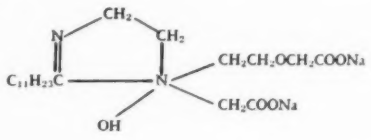
(*Turn to Page* 206)

*Miranol C 2 M Conc.—a registered trade name of Miranol Chemical Co.

Formula for compound described in U.S. Patent No. 2,528,378 to Mannheimer.



Formula for compound described in U. S. Patent No. 2,273,068 discussed above.



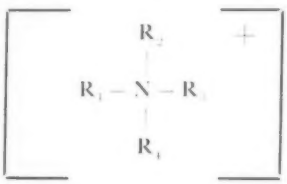
1933-1958—25th Anniversary of Household Synthetic Detergents

Versatile Cationic Surfactants

By Colin C. Campbell,
Rohm & Haas Co.
Philadelphia

ALTHOUGH the usefulness of cationic surfactants in household formulations is slight in comparison to the anionic and nonionic materials, a discussion of household surfactants which made no mention of the cationics would not be complete. This class of surface-active agents ionizes in aqueous solution to provide a high molecular weight organic hydrophobic group and a low molecular weight hydrophilic radical, which is generally inorganic. They are mostly quaternary ammonium and phosphonium compounds. The cationics are also known as "invert soaps."

The synthesis of quaternary ammonium compounds was first reported in 1897. Although their antiseptic activity was recognized in 1908, little interest in their use as germicides was aroused until 1928. At this time the quaternaries were also found to be excellent textile softening agents. In 1935, Domagk published a series of articles on alkyl dimethyl benzyl ammonium chlorides of the type structure:



in which R_1 is a long chain alkyl group and R_2, R_3 and R_4 are lower molecular weight alkyl, aryl or alkaryl groups. X is an anion, usually chloride.

Several years later Bruson described a similar series of compounds in which R_1 is a substituted aryl polyethoxy radical. In other compounds, the nitrogen atom is part of the cylic structure, such as pyridine. Many other types have been prepared, but these represent most of the current production.

Household Uses

Household uses of cationic surfactants divide themselves into two kinds—germicidal applications and applications which take advantage of the fact that the materials are substantive to the surfaces of fabrics such as wool and cotton. The germicidal applications are concerned with the control of various types of bacteria, algae and fungi both in and around the home; and the fabric applications with the softening and antiseptic treatment of textile fibers.

Quaternaries may be used as general household sanitizers, sometimes in combination with nonionic detergents as detergent-sanitizers. Germicidal uses also cover a fairly wide range of cosmetic and pharmaceutical products. For example, cream formulations for after-shampoo hair rinses are growing steadily in popularity. This is because cationic quaternary ammonium compounds make hair soft and lustrous by removing soap film and providing necessary lubrication of the scalp without grease. In hair grooming, static electricity causes the hair to follow the comb. A cream rinse based on Rohm & Haas Company's "Triton X-400," for example, removes the static charge and by virtue of the cationic nature of the compound, makes hair easy to manage.

Topical solutions for minor cuts and abrasions of the skin, which are based on the same materials, also are being promoted with increasing success. "Bactine," manufactured by Miles Laboratories, Inc. and the Parke-Davis Company's "Phemerol" are prominent examples. Stimulated by large-scale promotion, sales of deodorants are increasing at a rapid rate; and the most successful of these products in liquid form contain cationic quaternaries. So do some other related preparations in this field such as antiseptic after-shave lotions, nose drops and mouth washes. Another household service performed by the cationic quaternaries is the antiseptic treatment of baby diapers. Hospital tests show that the sanitizing action of the quaternary effectively prevents multiplication of ammonia-forming bacteria, and so avoids one of the most common causes of diaper rash.

Certain quaternaries have long been recognized as effective algicides. Now this application is growing by leaps and bounds as a result of the boom in popularity of private outdoor swimming

pools. The demand for swimming facilities convenient to the home as well as to community centers, clubs, motels and camps, is turning out to be a record breaking one; and is reflected in the upswing of sales of quaternaries as algicides.

A ten per cent quaternary formulation in a concentration as low as one gallon to every fifty thousand gallons of pool capacity is a recommended concentration for controlling algae. Uncontrolled, these algae can turn clear sparkling water cloudy and green in a few days, and make pool sides slimy and ladders slippery, while often producing an objectionable odor in the bargain. The growth of algae in a pool causes rapid dissipation of the chlorine added to purify the water—one reason why chlorine itself is not a satisfactory algicide in most pools. In more concentrated formulations certain quaternaries have proved to be effective disinfectants. For example, three quarters of an ounce of a ten per cent solution of "Hyamine 2389" in a gallon of water has been found effective in killing fungus organisms which cause athlete's foot.

Consequently, formulators recommend the product for foot baths and for such janitorial uses as the mopping of walks, of floors in shower and locker rooms and the paved surfaces adjacent to swimming pools. A slightly weaker solution serves effectively as a disinfectant rinse for bathing suits and caps.

Textile Uses

If you went to the linen closet this morning before showering, and saw a stack of towels with fibers fresh, fluffy and soft, their inviting appearance and luxurous "feel" could well be the result of a rinse containing a cationic quaternary—"Arquad 2HT," for example. If, on the other hand, the towel fibers looked stringy and matted down, this could be because the towels had received no special rinse—and this illustrates one of the principal textile uses of cationic quaternaries.

Another is the use of "Triton X-400" as a softener and "hand" modifier of textiles. Capable of being absorbed on many surfaces, this product is substantive to such surfaces as wool and cotton, improving softness through the waxy nature of the hydrophobic portion of the molecule and the antistatic properties resulting from the molecule's cationic charge.

Growing sales of wading and swimming pools for children has boosted sales of disinfectants and created growing markets for new products such as "Pool-Gard", which is based on a Rohm & Haas "Hyamine" quaternary. Product is designed to prevent green algae from developing, to keep water sanitary and to ward off secondary infections from cuts and scratches.

Versatile Materials

Quaternaries are thus finding a growing use in household products. They are sufficiently versatile to serve as a general sanitizer for utensils and glassware, tables, clothing and fabrics. They maye be used for mold and bacteria control on walls and ceilings, and for algae control in swimming pools. They also find specialty uses in certain cosmetics and pharmaceuticals. Quaternaries do not compete with anionics and nonionics as household detergents. Instead, they are supplementary to them in various sanitation and specialty applications in the home.

★

Mileage Payments Higher

Mileage payments to salesmen driving their own cars on company business have reached an all-time national high of 8.84 cents per mile. This represents an increase of 12½ per cent from a year ago when the national average was 7.72 cents per mile. These figures were disclosed recently by Michael Braude, president of Emkay, Inc., leading national auto fleet leasing firm, which conducted an independent survey on fleet costs. The survey revealed that payments ranged from a low of 6.5 cents per mile to a high of 11 cents per mile.

The survey covered companies with national sales forces operating in all sections of the country. Regional differences in payments caused by special local conditions are included in the national average. The survey covered payments by more than 100 companies with fleets ranging in size from 50 to 500 cars.

The average mileage rate was eight cents per mile, paid to 42 per cent of the salesmen. Sixteen per cent are paid nine cents or more, a gain of six per cent from the preceding year.

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Chemical news whets the competitive edge

In making chemical specialties, the big difference between breaking even and breaking profit records is often made up of little things. Maybe it's a fraction of a cent saved per unit. Maybe it's a few minutes shaved off a production schedule. Or maybe it's a slight (or startling) improvement in product performance. Whatever the factor, the change for the better often results from someone with a sharp eye on costs keeping a sharp eye on news. This series of chemical news notes is designed to help the man looking for profitable news.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

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PROFITABLE "DEPRESSION" HITS AEROSOLS

Chlorothene cuts unit costs by doubling as a depressant and solvent in aerosols.

A research chemist always feels like he's made a "strike" in bowling over costs when he finds one ingredient that will do the work of two. And chemists in the aerosol business have been scoring well lately by substituting a new solvent, Chlorothene® (Dow 1,1,1-trichloroethane, inhibited), for a portion of the propellant system in aerosol products.

Dow is certain Chlorothene will offer definite cost advantages. It's not only a lower cost depressant—it also permits the use of less ethanol, thereby reducing the degree of flammability of the finished formulation. These are major factors in the choice of Chlorothene as a pressure depressant and solvent in aerosols.

Versatility—Low Toxicity. The low toxicity of Chlorothene and the fact that it has no flash point, no fire point (flammability characteristics similar to trichloroethylene), has given it the edge in many aerosols. Filling losses are lower and corrosion presents no special problems with non-aqueous aerosols—performs well with buna gaskets.

The unique combination of desirable properties has helped aerosol manufacturers put better products on store shelves . . . at lower cost. And their customers . . . who really press the button on profits . . . find a pleasing difference in hair sprays, insecticides, moth-proofing and water-proofing aerosols containing Chlorothene.

The safety and high solvent power of Chlorothene have also made it the preferred solvent for many types of industrial cleaning, for adhesives, for lubricant carriers and cutting oils and for fabric cleaning formulations.

There's more profit with every push of the button for makers of hair sprays using Chlorothene as a pressure depressant and solvent.

METHYLENE CHLORIDE

With the good clean smell of extra profit

Aerosol users once turned up their noses at the smelly solvents in sprays. No more. Aerosol makers are replacing disagreeable petroleum solvents with Dow Methylene Chloride and they're getting an excellent pressure depressant at the same time . . . at a saving.

When Dow Methylene Chloride was first sent in to pinch hit for more costly fluorinated compounds as a pressure depressant, cost cutting was the primary objective. Manufacturers found they could take a big slice out of ingredient costs using Methylene Chloride to replace a portion of the propellant systems in room deodorants, insecticides, protective lacquer coatings, and paint removers. But they also found that the high solvency power of Dow Methylene Chloride made it an excellent solvent for the active ingredients in many aerosols. This meant the substitution provided two-way savings.

In household aerosols, Dow Methylene Chloride is increasing formula efficiency, eliminating objectionable odors . . . and saving money on every unit! For more information, write to Dow.

METHOCEL 60 HG

Unique gum combines solvent solubility with aqueous gum properties

To keep customers from going back to squeezing the tube, makers of aerosol toothpastes have to be sure their product dispenses smoothly and without a sputter. Methocel® 60 HG is being checked out in several different brands. And others are following suit.

This new, superior emulsion stabilizer holds ingredients in proper suspension, gives the paste better flow characteristics and maintains proper consistency. Small wonder that aerosol toothpaste makers want to protect their investment in these new products with a stabilizer such as Methocel 60 HG.

Methocel 60 HG is only one of the family of synthetic gums Dow makes under the Methocel trademark (for methylcellulose). Others find a wide variety of applications as thickeners, stabilizers, film formers, emulsifiers and binders. Methocel 90 HG, 15,000 cps., in very low concentration, is providing efficient thickening at low cost. Methocel 90 HG also eliminates thermal gelation problems at temperatures below 90 degrees C.

Methocel offers better emulsion stabilization and flow characteristics as well as helping to maintain desired consistency.

From soaps and shampoos to toothpastes and roll-on deodorants, Methocel is an important ingredient in product success. Complete information on all the Methocel products, together with instructions for putting Methocel into solution, is available from Dow.

If you aren't already profiting from these and other Dow chemicals, discover how you can. We suggest you write for complete information to THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Sales Department 779R.

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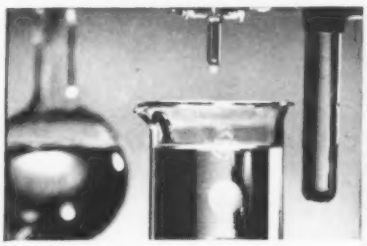

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NP-27	20	Aromatic-soluble emulsifier and wetting agent.
NPX	60-65	General purpose detergents, wetting agents, and emulsifiers.
TP-9	51-56	
NP-35	90-95	Detergent and wetting agent at elevated temperatures or in presence of dissolved salts.
NP-40	100	Detergent and wetting agent above 100° C.
TMN	35-37	Outstanding nonionic wetting agent with good leveling rewetting properties.
XD	60-65	Outstanding emulsifiers and low-foaming detergents.
XH	90-100	

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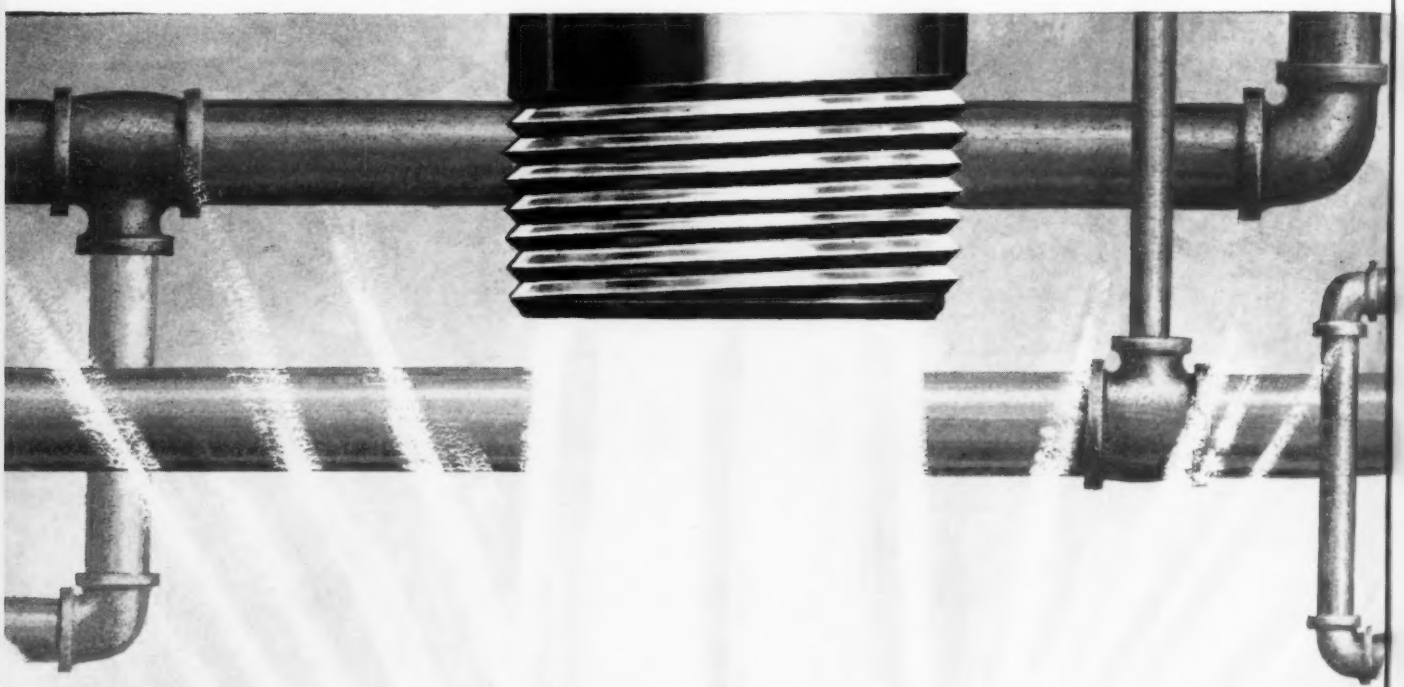

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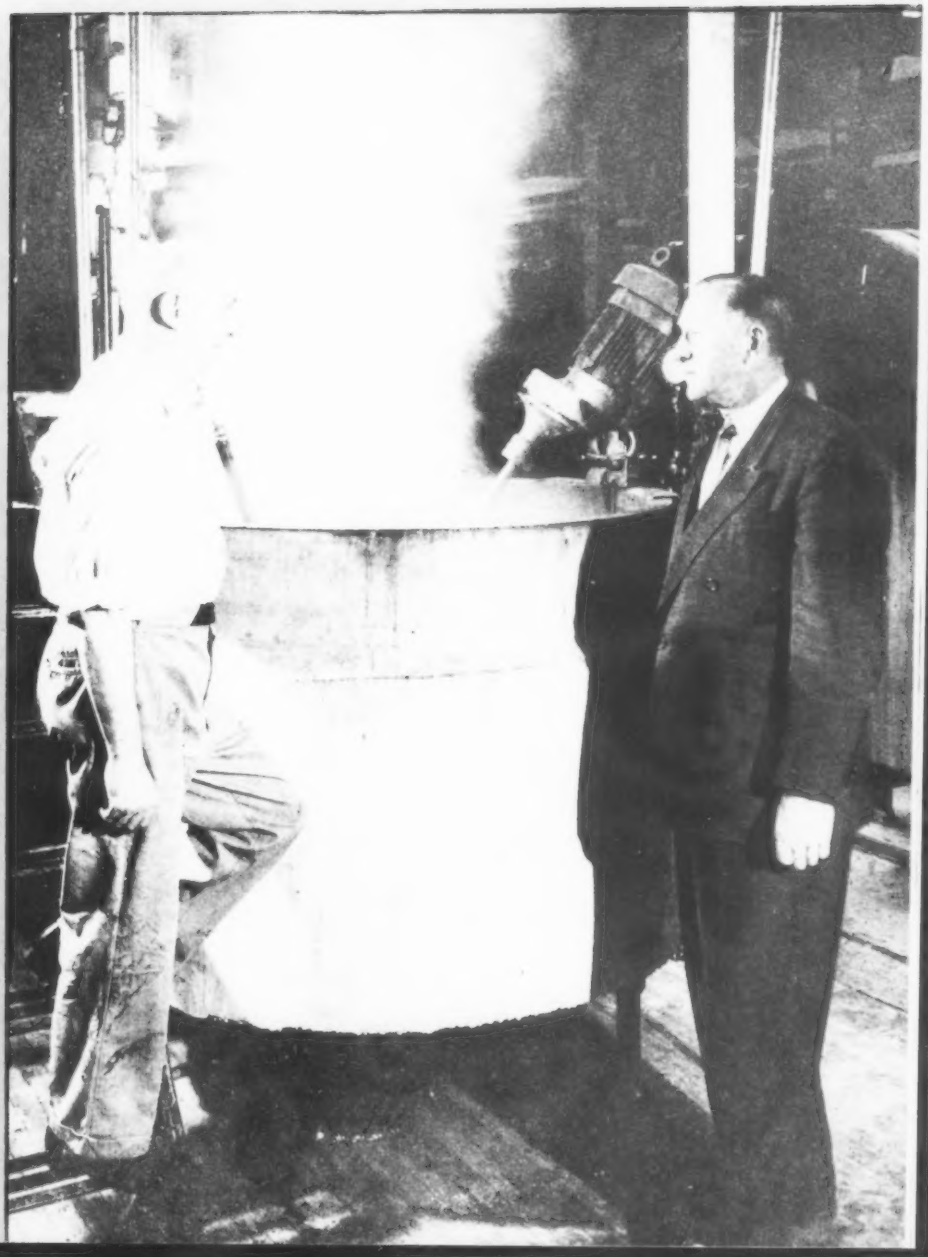

Willard B. Eddy, right, president of Rochester Germicide Co., discusses production problem with Thomas O'Meara in plant of 70 year old specialties firm. Steam jacketed mixing tank is in background. See story on firm's history beginning on page 75 of this issue.

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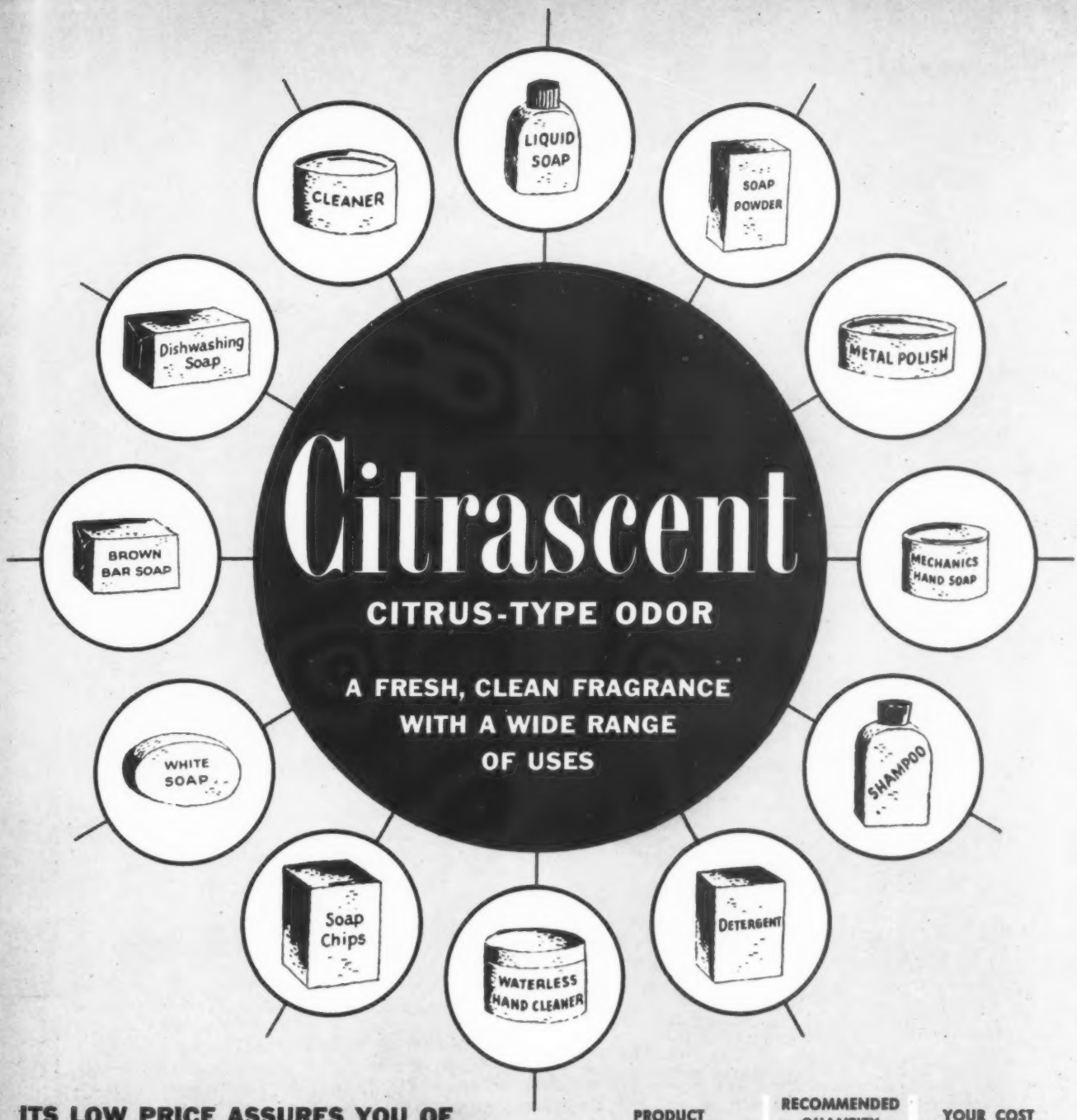

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3. COMPATIBLE—It's compatible with most other insecticides, carriers, deodorizing agents.

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Circle 7-0100

CYANAMID

ATTENTION!

all floor wax manufacturers!

*Formerly Gersthofen (I.G. WAXES)

WAX KPS/2106 EMULSIFIER SYSTEM NOW MAKES POSSIBLE a new type self-polishing floor wax WITH THESE UNSURPASSED ADVANTAGES

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- FREEZE-THAW STABLE to AT LEAST 5 CYCLES.
- Possible to Manufacture as a FLUID, STABLE, 40% SOLIDS Product. Yields EXCEPTIONAL FREIGHT SAVINGS when sold and shipped as a Dilutable, Concentrated DRY-BRIGHT FLOOR FINISH.
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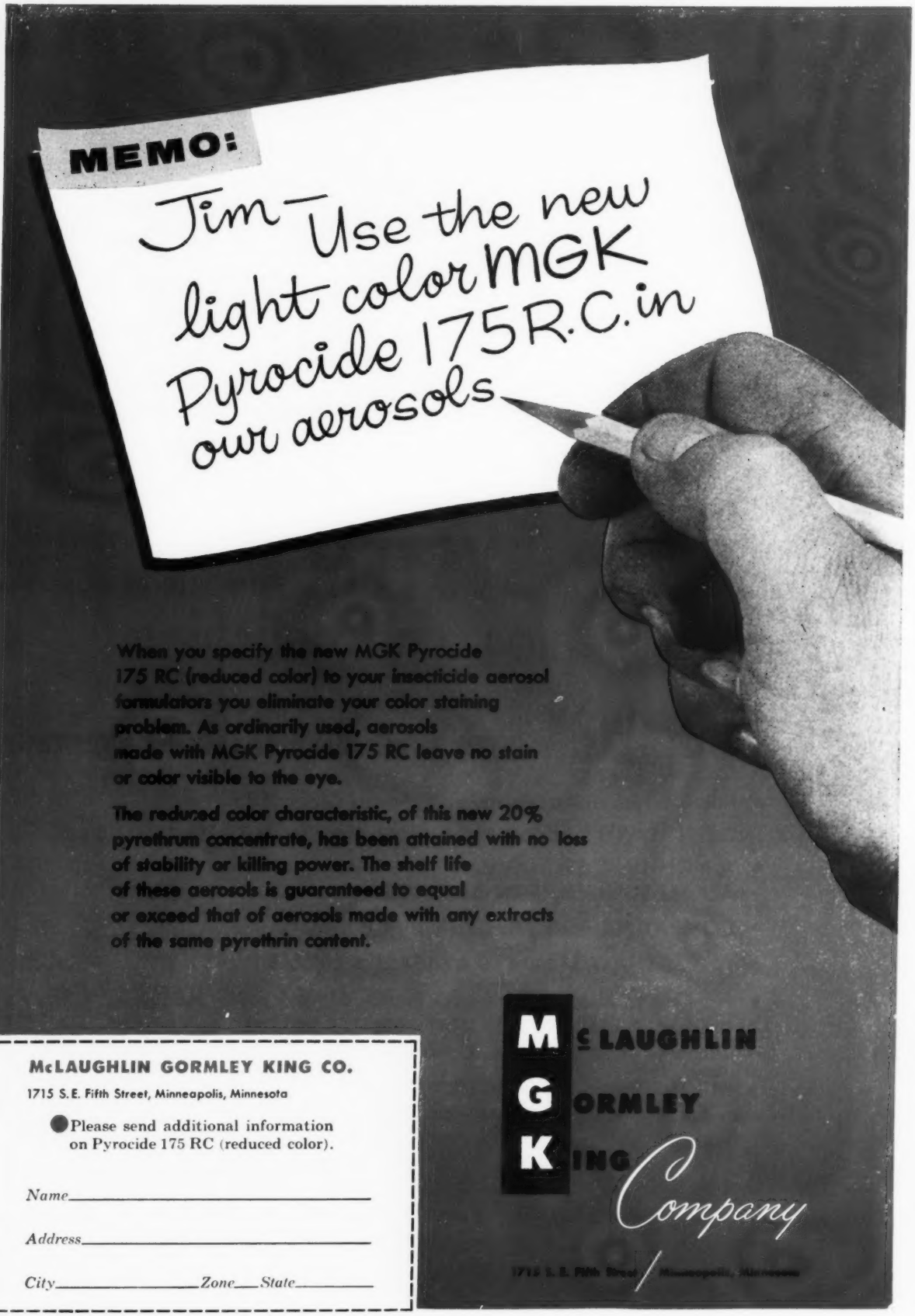
MEMO:
Jim — Use the new light color MGK Pyrocide 175 R.C. in our aerosols
When you specify the new MGK Pyrocide 175 RC (reduced color) to your insecticide aerosol formulators you eliminate your color staining problem. As ordinarily used, aerosols made with MGK Pyrocide 175 RC leave no stain or color visible to the eye.
The reduced color characteristic, of this new 20% pyrethrum concentrate, has been attained with no loss of stability or killing power. The shelf life of these aerosols is guaranteed to equal or exceed that of aerosols made with any extracts of the same pyrethrin content.
McLAUGHLIN GORMLEY KING CO.
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Please send additional information on Pyrocide 175 RC (reduced color).
Name
Address
City Zone State
M McLAUGHLIN
G GORMLEY
K KING Company

Modern chemical specialties plant of Rochester Germicide Co., at 33 Hollenbeck St., Rochester. Factory of 135,000 square feet was acquired in 1946. Building houses manufacturing facilities, warehousing, shipping, research and headquarters offices.

It all began in a boarding house . . .

Rochester Germicide Co. at 70

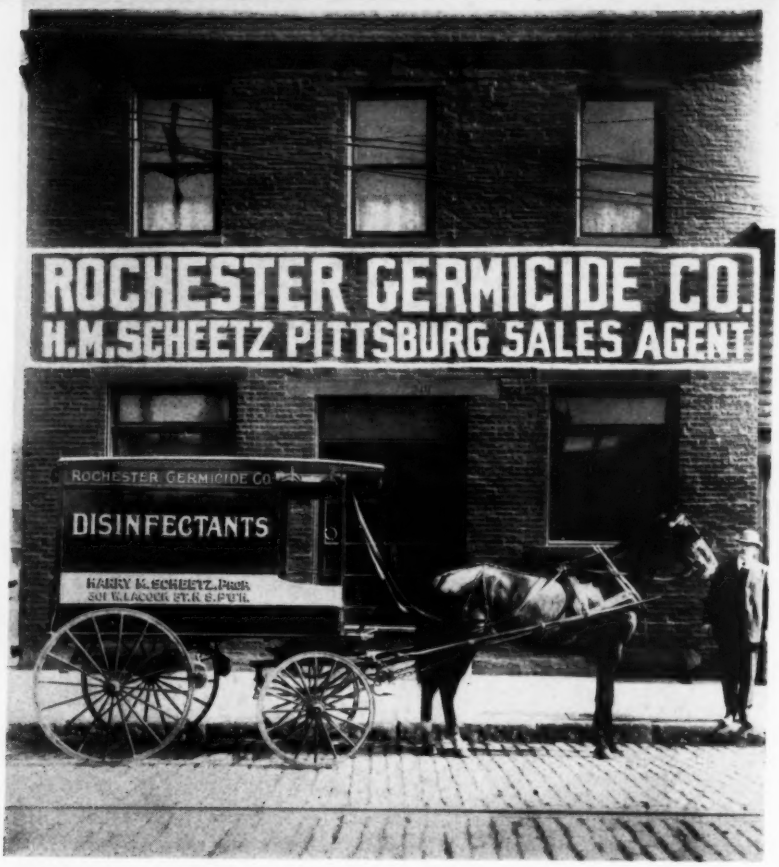
IN the 1880's three young men occupied the same Rochester boarding house and entertained the same ambition: to own a business of their own. Since Rochester was a shoe manufacturing center, that industry attracted their attention first. Daniel Calkins and C. P. "Percy" Crowell began to make children's moccasins in the evenings while occupied with their normal jobs during the day.

In 1888 appeared an opportunity to purchase the Rochester agency of the Aromatic Disinfecting Company of Philadelphia; this move was the forerunner of the Rochester Germicide Company. In 1894 the disinfectant business was showing strength and the shoe business was proving unsuccessful. As a result, the name of the concern was changed to the Rochester Germicide Company and a third ambitious friend, George Ford, joined the organization as an officer and director. Incorporation was completed in 1897. That same year the Calkins disinfector unit was patented. This improvement in equipment sparked growth for the tiny concern.

Willard B. Eddy has been president of Rochester Germicide Co. since 1936

Soon Daniel Calkins was devoting his full time to the business as general manager. Equipment and materials were improved. Related products were manufactured. Branch warehouses and regional sales offices were opened. By 1907 the company was operating in Boston, New York, Toronto, Chicago, Pittsburgh and Cleveland. It was manufacturing and selling hand soaps, floor cleaners, disinfectants and insecticides in addition to the automatic restroom sanitation service.

In 1914 the Toronto branch was incorporated as an independent



Headquarters of Rochester Germicide Co. as it appeared at turn of century.

concern, the Canadian Germicide Company. Handling very much the same products and services in Canada, the Canadian Germicide Company now has its manufacturing facilities in Toronto and also operates a branch warehouse and sales office in Montreal.

By 1916 the operation of the Rochester Germicide Company had grown to the point where C. P. Crowell came with the concern to devote his full efforts and abilities as an officer and purchasing agent, a position he filled until his death in 1942.

Adds Modess To Line

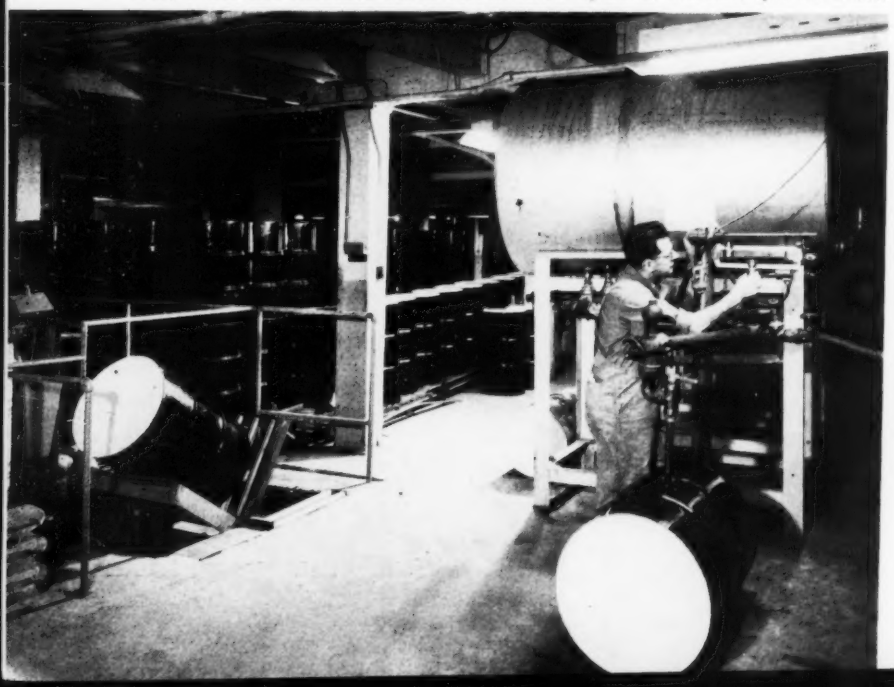
An important diversification of the company occurred in 1927

William S. Calkins, 1st vice-president.

when the Rochester Germicide Company was appointed by the Johnson and Johnson Company to be the exclusive national distributor of "Modess" brand sanitary napkins for sale through vending machines. Operating through more than 900 distributors, as well as through the Rochester Germicide Company sales force, distribution of "Modess" through vending machines has grown to cover the entire United States. To insure the guidance of the company for forty-eight years, in 1936 D. N. Calkins and C. P. Crowell turned to Willard B. Eddy, William S. Calkins, and later to C. Welland Crowell to conduct the business as president, first vice-president, and vice-president in charge of purchasing.

Willard Eddy had joined the firm in 1918. He had acted as company chemist, salesman, district sales manager, and general man-

Scene in plant of Rochester Germicide Co. shows automatic filling of soap drums using scales and controlled cut-off valves. Drum up-ender and conveyor are at left.



F. H. Wittmaack, vice-president and Rochester district sales manager.

Herbert J. Chamberlain, treasurer and general manager.

Two members of the research staff of Rochester Germicide Co. working in the company's modern laboratories in Rochester. At right is G. A. Karker and at left is Peter Attaldo. Modern equipment is a feature of the firm's research and development laboratory facilities.

ager. William Calkins had been district sales manager and general office manager before becoming first vice-president and treasurer. Welland Crowell had functioned as company chemist and factory manager before becoming first vice-president and purchasing agent.

Upon the death of Daniel Calkins in 1950, his son, Harlan F. Calkins, was elected chairman of the board of directors. A Rochester attorney, Harlan Calkins has handled the legal affairs of the company for many years.

In the early years the Rochester Germicide Co. occupied a number of small locations for its offices and factory. In 1910 a new factory was built at 16 Dowling Place in Rochester. This was expanded twice in later years. In 1946 the present factory property of 135,000 square feet was purchased.

The products manufactured today include floor waxes, floor finishes, liquid and powdered hand soaps, insecticides, disinfectants, floor cleaners, and soap dispensers, in addition to the "Modess" napkin vending service and Sanor Automatic Restroom Service.

The expanding sales force consists today of 160 salesmen, 125 servicemen, operating from branches located in Boston, New York, Philadelphia, Pittsburgh, Cleveland, Detroit, Cincinnati, Chicago, St. Paul, St. Louis, Kansas City, and New Orleans. Since the middle 30's the company has enjoyed a rate of growth whereby their annual sales volume has doubled approximately every five years.

Officers of the company include: Vice-presidents: Herbert W. Drury, New England district sales manager; H. F. Wittmaack, Rochester district sales manager; Walter G. Novesky, Chicago district sales manager; Herbert J. Chamberlain, treasurer and general manager; Walter H. May, secretary and purchasing agent.

Walter H. May, secretary and purchasing agent.

Herbert W. Drury, vice-president and New England district sales manager.

Willard B. Eddy, president of Rochester Germicide Co. and William S. Calkins, first vice-president, confer in plant with Tom O'Meara. A jacketed kettle for producing floor waxes in foreground.

Control testing and specifications of

Polymers for Use in Floor

THE successful performance of polymer dispersions in floor polishes has resulted from skillful formulating techniques developed by polish manufacturers and the availability of unique products. To maintain satisfactory quality of these polymers it has been necessary to establish special specifications and tests. This paper will discuss the various control tests and production procedures which are being used to assure uniformity of product.

Polymers designed specifically for the floor polish industry have certain critical properties which distinguish them from general purpose latices. These include small particle size, ease of removability, low residual monomer odor and compatibility with common floor wax components. In addition these products have other desirable features such as hardness, water resistance, toughness and mechanical and heat stability. The measurement of most of these properties is a routine operation and needs little comment, but there are a few control tests of an unusual nature that deserve more detailed attention. The cooperation of various floor wax manufacturers in the development of some of these special methods has been most helpful and is acknowledged.

In Fig. 1 and 2 are listed the specifications, general properties of several competitive polymer dispersions currently offered to the trade.

Figure 2. General Properties of Floor Wax Polymer Dispersions

	Polymer A	Polymer B	Polymer C	Polymer D
Chemical Type	modified polystyrene	vinyl copolymer	styrene copolymer	modified polystyrene
Particle Charge	anionic	anionic	anionic	*
Heat Stability	1 mo. @ 70°C	*	*	72 hrs. @ 55-60°C
Freeze-Thaw Stability	unlimited	unlimited	stable	excellent
Mechanical Stability	excellent	good	excellent	excellent
Film Characteristics	non-filming	film-former	non-filming	non-filming
Molecular Weight	150,000	*	*	*

*No information available

Measuring Particle Size

The key to the successful introduction of polymers into floor wax manufacturing was the development of the ultra-fine particle size dispersion. Only through the use of this type of polymer has it been possible to obtain the high gloss so essential to the formulation of a self-polishing finish. It was of paramount importance, therefore, to both supplier and manufacturer that the particle size of these emulsions be under rigid control.

During our early work on modified polystyrene systems an average particle size of 0.03 microns was obtained by electron microscopy. Since it was obviously impractical to adapt such a specialized technique to production inspection, other means of measuring or estimating particle size were sought. An interim solution was devised using the gloss readings obtained with a standard wax formulation made with polymer dispersions of obviously different particle size as a guide. This system was inadequate, depending as it did on a visual inspection based on the judgment of individual operators.

At the suggestion of a wax manufacturer the relation between turbidity and particle size was examined and found to be applicable to the measurement of polymer particles of colloidal size into which these polystyrene dispersions fall. If a beam of light is passed through a true solution, the light path is not detectable, whereas the light passing through a colloidal dispersion is scattered, rendering the beam visible, a phenomenon known as the Tyndall effect. The intensity of the scattering is dependent upon the concentration and size of the particles in the dispersed phase. A typical relation between concentration and turbidity is shown in Figure 3. These data were obtained by measuring the turbidity during progressive dilution of "Ubatol U-2001"* with water back

*Paper presented during the 44th mid-year meeting, Chemical Specialties Manufacturers Assn., Cincinnati, May 20, 1958.

Figure 1. Specifications of Several Floor Wax Polymer Dispersions

	Polymer A	Polymer B	Polymer C	Polymer D
Solids, %	35-37	35	35-37	35-37
pH	8.7-9.3	7.5	9.5-9.8	8.8-9.2
Residual Monomer, %	0.1 maximum	0.5 maximum	0.1 maximum	0-1 maximum
Particle Size	0.03 u	0.05 u	0.03 u	0.04 u
Sediment, %	0.2 maximum	*	*	*
Viscosity, cps	10-25	*	10-25	0.1 maximum
Specific Gravity (25°C)	1.03	1.05	1.03	1.03

*No information available

*Registered trade mark of UBS Chemical Corp., Cambridge, Mass.

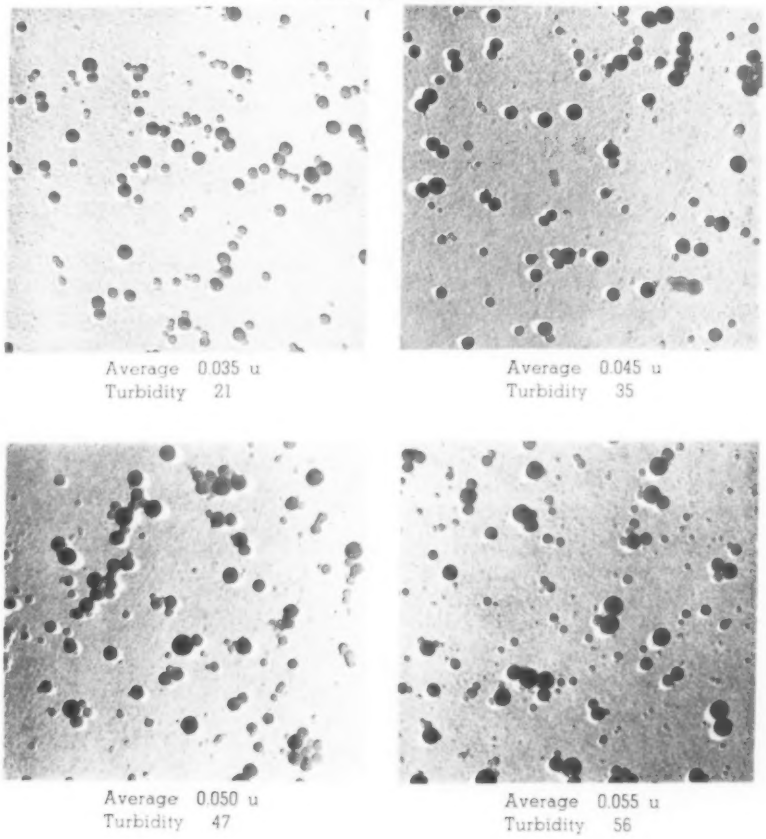
By Richard H. Cahill and Roland M. Avery, Jr.*
UBS Chemical Corp.
Cambridge, Mass.

to zero solids concentration.

In practice the concentration of the polymer is kept constant and, therefore, the turbidity is directly dependent upon particle size. Figure 4 shows electron microphotographs of four lots of polymer in which the turbidity varies from 21 to 56. From these photographs the average particle size of each of the four batches was measured and the results plotted vs. turbidity on semi-log paper as shown in Figure 5. It is seen that particle size is a logarithmic function of turbidity. Thus, by using a turbidity specification as a control of particle size, the user is assured of a material conforming to very close tolerances in this critical property. All new polymers at U B S Chemical Corp. are produced under the above scheme of particle size control, with gloss vs. turbidity measurements serving as the criterion for the range of turbidity to be included in the specification.

The attainment of particle size control in large scale production is accomplished by careful combination of those elements in an emulsion polymerization reaction which actually determine the dimensions of the dispersed particles. The type and quantity of emulsifiers and protective colloid present, solids concentration, reaction rates, temperature cycles, types of catalysts employed, agitation rate, are all contributing factors and must be closely controlled.

Figure 4. Average particle size (microns) of polystyrene dispersions of varying turbidity



Average 0.035 u
Turbidity 21

Average 0.045 u
Turbidity 35

Average 0.050 u
Turbidity 47

Average 0.055 u
Turbidity 56

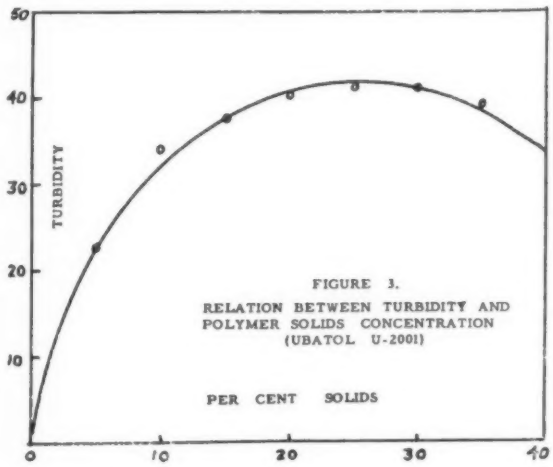


FIGURE 3.
RELATION BETWEEN TURBIDITY AND POLYMER SOLIDS CONCENTRATION (UBATOL U-2001)

Actual measurement of turbidity may be accomplished by a number of instruments; one such method uses an electrophotometer in which light at a specified wavelength is passed through a thin cross section of polymer latex and compared to the same light passed through distilled water.

In the conversion of a monomeric material to a high polymer by emulsion polymerization the presence of a small amount of unreacted monomer is inevitable.

Unfortunately, the particular monomers which have proven satisfactory in performance possess fairly potent odors and unusual to the ultimate consumer of a floor wax. In addition, ammonia is used in both polymer and wax emulsions for pH control and while the odor of ammonia is a "clean," familiar scent to the housewife, in combination with certain monomers, an unwholesome, synergistic effect is apparent. An added complication is the preference of some floor finish manufacturers for masking agents while others prefer a "natural" product odor, provided it is volatile and unobjectionable.

Through discussions with polish manufacturers and on the advice of an experienced consultant, a monomer level of 0.2 per cent was set as the maximum allowable concentration. In many cases a residual monomer content of less than 0.1 per cent has been found desirable.

Methods of reducing monomer level in production include treatment with catalysts, extended heating cycles, steam distillation, vacuum distillation and air or inert gas sparging. Prolonged heating cycles, foaming and partial precipitation are, of course, pitfalls to be avoided. A combination of chemical and physical methods has been found in practice to be most suitable.

An adaptation of a procedure used in the synthetic rubber industry has proven satisfactory for monomer analysis of polystyrene emulsions. Residual monomer from an inhibited latex sample is distilled, brominated and titrated by iodimetry. Another technique, which uses no reagents and is adaptable to both polystyrene and polyacrylate systems, involves a distillation into a Kingman moisture trap in which monomer and water layers are separated. The result can be read directly from the calibrated trap stem.

The presence of appreciable sediment in polymer dispersions is undesirable. It detracts from the appearance of finished formulations and presents cleaning problems in storage tanks and centrifuges. For these reasons it is essential that the polymer producer reduce the amount of sediment to a minimum before shipping. Most commercially available filtration equipment, such as plate and frame presses, vacuum filters or mechanical shakers, are not suitable for handling polymer emulsions because of excessive clogging and complicated cleaning procedures. A simple system of successive passes through screens of decreasing mesh size has been found to be the most economical and efficient method.

To measure the amount of sediment remaining after filtration a laboratory centrifuge is used. Special constricted tip, calibrated tubes provide a direct reading in terms of per cent sediment.

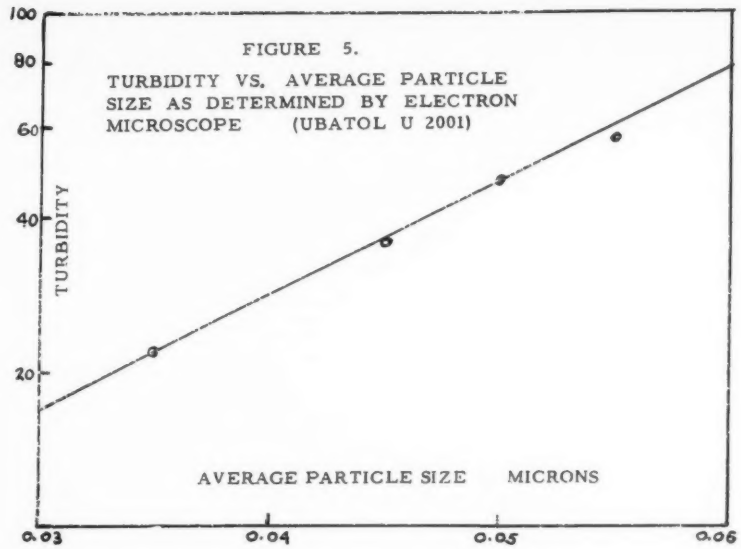


FIGURE 5.
TURBIDITY VS. AVERAGE PARTICLE SIZE AS DETERMINED BY ELECTRON MICROSCOPE (UBATOL U 2001)

Other Routine Tests

Measurements of pH, specific gravity, viscosity and solids are made on all batches of polymers using conventional methods. One exception is worthy of added mention since it is rather unusual to apply this method to polymer emulsions. Because of their transparency due to their colloidal state of subdivision, it is possible to obtain total solids of many floor wax polymers with the refractometer. Basic requirements in this method are that sufficient light be transmitted through the sample to give a definitive borderline on the instrument and that the prisms be in relatively good physical condition. Successful application of this technique allows the measurement to be made with greater accuracy in a fraction of the time required by conventional oven weighing methods. To illustrate this method Figure 6 was constructed showing the relation between refractive index and total solids for three polystyrene floor wax polymers.

Control Procedures

The control tests discussed above are performed on a product which is the result of a special type of chemical reaction known as emulsion polymerization. In this process monomer droplets, held in suspension by emulsifiers and agitation, are converted to high molecular weight materials by a chain reaction initated by catalysts which decompose to free radicals under the influence of heat or reducing agents. The reaction itself is influenced by numerous factors important among which are temperature, reaction rate, agitation, feed rates of materials added during the run, elimination of air, and purity of raw materials. Precise control of these and other variables is, of

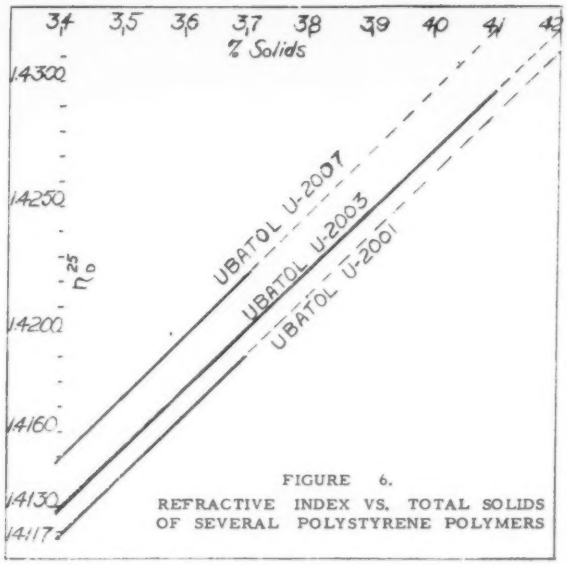


FIGURE 6.
REFRACTIVE INDEX VS. TOTAL SOLIDS OF SEVERAL POLYSTYRENE POLYMERS

course, a requisite if reproducible results are to be obtained.

A Quality Control Flow Sheet has been prepared (Figure 7) showing the chronological sequence of the various test methods on a typical polymer product manufactured at U B S Chemical Corp. Several items should be noted on this diagram. For instance, both intermediate and reactor vessels are mounted directly on scales. This is greatly to be preferred to liquid metering methods both from the standpoint of accuracy and ability to check additions made during the polymerization run. Note also the number of samples which are analyzed and then held in shelf storage for ready reference in case of difficulties in the subsequent processing or eventual usage of finished material. Another safeguard is the use of a hold tank where individual batches of polymer are examined completely for conformance with specifications before they are cleared for transfer to the storage tanks. Master blends of 10,000-12,000 gallons are finally completely reanalyzed before shipment is made.

As with any relatively new product, the areas of possible difficulties encountered in actual usage of polymers can only be superficially explored. To minimize such problems information on compounding, leveling, plasticizing etc., are provided in technical bulletins; these methods are, in themselves, the result of extensive testing programs. In addition, performance tests are routinely run on all new suggested formulations. These include tests of water spotting, scrub resistance, abrasion resistance, removability, gloss and slip resistance.

Polymers and finished formulations are checked out for their resistance to bacterial action. Where necessary, sufficient preservative is added to the polymer latex to protect it from such attack. Users are advised, however, that they should add such additional protection as is required for the non-polymeric portion of their formulas.

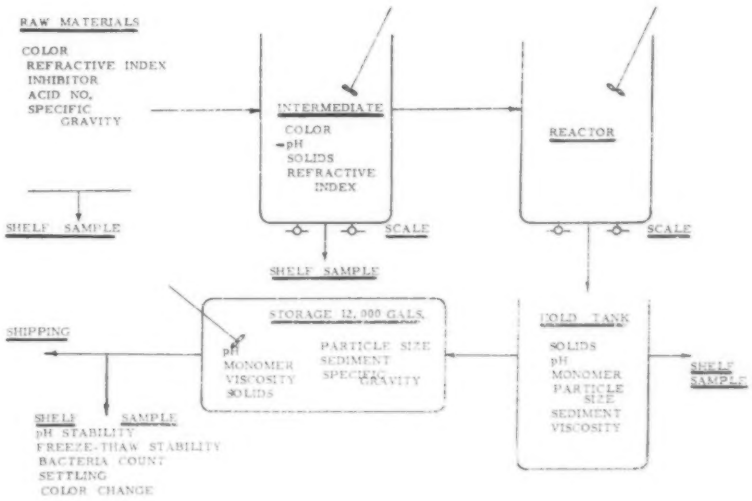
Lengthy corrosion tests have been carried out on a variety of materials of construction to provide information on acceptable methods of shipping, pumping and packaging of polymers and polymer-based polishes. Such tests always include the preparation and floor testing of polymers which have been exposed to the specified construction material.

While much has been accomplished in the testing and control of polymers as raw materials, there remain areas wherein the supplier can offer further assistance. The application of electron microscopy methods to the floor polish field has yielded considerable valuable information related to both polymer synthesis and formulation problems. As a result a new theory on the effect and location of plasticizers has been advanced which has had significant practical implications. The structure of applied floor finishes is presently being studied in some detail and future technical presentations on this subject may be expected. Data on particle size distribution was described earlier in this detailed report.

The use of the infrared spectrophotometer in the polymer field is extensive and its acceptance as a quality control instrument is increasing rapidly as quantitative methods of analysis are developed. A specific area for exploration with the infrared machine in the floor wax industry would be in the inter-

(*Turn to Page* 206)

FIGURE 7. QUALITY CONTROL FLOW SHEET FOR POLYMER DISPERSIONS



. . . Can Help Sell Insecticides

By P. L. Hauser*,
National Steelwares Division,
Root-Lowell Manufacturing Co.,
Chicago

FOR a time, there was an idea that the low pressure aerosol would make packaged insecticides and hand sprayers practically useless or at least unsalable.

T'aint so! Exactly the opposite is true!

The Bureau of the Census "Facts for Industry" shows that the number of sprayers produced and sold annually has more than doubled since the aerosol first came upon the market.

Further substantiation is contained in the CSMA Insecticide Survey which shows a gain in packaged space spray of from 10 million packages in 1951 to over 24 million packages in 1956. Residual sprays increased from 23 million packages in 1951 to over 31 million packages in 1956. Oil based livestock spray increased from a little under a million gallons in 1951 to about two million gallons in 1956. Fabric pest sprays increased about 10 times from 1951 to 1956.

Our company does not feel—and, I believe this is true of the sprayer industry generally, that the aerosol is particularly a competitor of our hand sprayers. Rather, we consider it a "companion." We believe that many economy-minded people enjoyed insect-free surroundings through the use of an aerosol and then later discovered that at least the same results could be accomplished with quality liquid insecticides dispensed by a good hand sprayer at less cost. There seems to be a definite market for both.

How can sprayers help the insecticide business? It is a well-known fact that the best quality insecticide, if improperly applied, is less effective than an inferior grade of insecticide if it is properly applied. What we mean by "properly" or "effectively" applied, is that the hand sprayer will: (1) break the insecticide into the proper droplet size; (2) dispense the insecticide in sufficient volume, and (3) dispense it with enough force to carry it to the insects to be killed. This is true whether the insecticide is for space or residual application. Many of the applicators included with a package of insecticide will do none of the three. Such applicators can do only a dis-service to your product and your customer and thus to sales. Make sure that the sprayer you market is right on at least these three points.

Hand sprayers today are not the hand-made Jerry-built contrap-

*Paper presented during 44th annual midyear meeting, Chemical Specialties Manufacturers Assn., Cincinnati, May 20, 1958.

ADVERTISEMENT—*This entire page is a paid advertisement* *Prepared by U. S. Industrial Chemicals Co.*

U.S.I. CHEMICAL NEWS

Sept. ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1958

Aliphatic Dinitriles And Diamines Prepared From ISOSEBACIC® *Acid*

A new method of synthesizing aliphatic dinitriles and diamines — some of them believed to be new compositions of matter — is described in U.S. Patent 2,824,118, recently issued to U.S.I.

ISOSEBACIC acid is reacted with ammonia and/or urea or other nitrogen-containing compounds to form a mixture of C_{10} dinitriles. They are primarily sebaconitrile, α-ethylsubero-nitrile and α,α′-diethyladiponitrile.

The nitrile mixture can then be hydrogenated in the presence of ammonia and a catalyst to yield C_{10} diamines. They are a mixture of decamethylene diamine, 1,8-diamino-2-ethyloctane and 1,6-diamino-2,5-diethylhexane.

The dinitriles are considered valuable as chemical intermediates, and for solvents, lubricants, plasticizers and textile water repellants. The diamines should be useful in the synthesis of various types of polyamides — particularly fibers — and in plastics, rubbers, plasticizers, synthetic lubricants, polyurethanes and other products.

Nutritional Dystrophy Studies Show Lower Methionine in Blood

It has been reported that determinations of methionine in the blood of children with nutritional dystrophy average considerably below normal. In a study of whole blood from malnourished and normal boys, methionine content was found to average 73 mg. lower in the first group (331 ± 16 mg. as against 404 ± 16 mg. for the normal group). Determinations on the serum alone did not reveal a similar variation.

It was felt by the investigators that low values in the whole blood of the malnourished children might be due to hypochromic anemia prevalent in the group.

390 Million Nonfood Aerosols Sold in 1957

The Chemical Specialties Manufacturers Association estimates that 390 million nonfood aerosol units were produced in 1957, based on 339 million units reported in their survey and adjusted for companies not responding. Here's how the report looked, in millions of units:

Hair Sprays	94.4
Shaving Lather	50.9
Room Deodorants	41.9
Insect Sprays	41.5
Coatings	36.5
Colognes and Perfumes	17.9
Household Products Other Than Room Deodorants and Glass Cleaners	16.9
Personal Products Other Than Shaves, Hair Sprays, Colognes & Perfumes	12.3
Glass Cleaners	11.2
Miscellaneous	15.6

New Roles Seen for Ethanol in Medical & Pharmaceutical Fields

Recent Developments Include New Nerve Block Application, And Improvement of Ruminant Nutrition

Medical and biochemical research on ethyl alcohol — best known as a solvent — is constantly revealing new facets of its personality. It is evident that ethanol has *many* modes of action—physical, chemical and biological — that are important to the doctor, the nutritionist and the producer of pharmaceuticals.

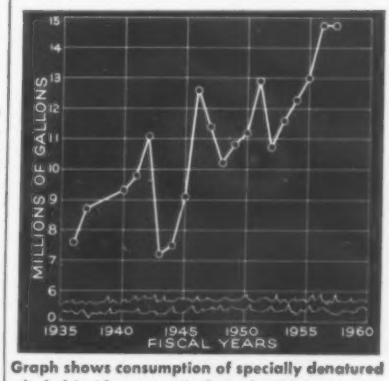
The practical use of ethanol in medicine as a nerve block agent is increasing. A few months ago a team of radiologists and neurosurgeons revealed a method of treating the painful facial *tic douloureux* by radiologically controlled injections of absolute alcohol. Forty-five patients so treated experienced immediate relief of symptoms, it was reported, although several had to be retreated, and one finally had to undergo the usual surgery.

New Function in Microbiology

Fermentation processes utilize several of ethanol's well-known modes of action—solvent, carbon source for yeast growth, and nutrient raw material for bacterial conversion into other chemicals.

And now, within the last year, a patented* novel use of ethanol in fermentation has begun to revolutionize the ruminant feed industry. It has been discovered that alcohol ingestion by cattle and sheep accelerates rumen microflora metabolism, by acting as a hydrogen donor. Ethanol has the unexpected property of maintaining a low oxidation-reduction potential in the rumen. This allows greater utilization of natural feeds rich in cellulose, and enables the micro-organisms in the rumen to make better use of nonprotein nitrogen materials such as urea. The microfloral cycle is

MORE



Graph shows consumption of specially denatured alcohol in pharmaceuticals and toiletries.

Sources: (a) STATISTICS ON THE USES OF SPECIALLY DENATURED ALCOHOL, Internal Revenue Service (data for 1936-1937 and 1940-1957). (b) ANNUAL REPORTS OF THE COMMISSIONER OF INTERNAL REVENUE, Internal Revenue Service (data for 1938 & 1939).

Heterocyclic, Homocyclic Systems Made by New Route

Research chemists have discovered that heterocyclics and homocyclics can be synthesized by an entirely new method. Potassium amide is reacted with the starting material to form a benzyne intermediate with a nucleophilic center. Nucleophilic means "seeking an electron-deficient group." In the presence of liquid ammonia, this center then adds intramolecularly to give a closed-ring compound.

Indane, indole, 2-phenylbenzothiazole, benzoxazole and phenothiazine have all been made by this new technique, and the research group believes it can be used to prepare many other hetero- and homocyclic compounds. Both five- and six-membered rings have been formed, all through intramolecular addition of nucleophilic sulfur, oxygen, nitrogen and carbon.

Stauffer's $TiCl_4$ Plant Bought by Mallory-Sharon

Stauffer Chemical Company's new 50 million pound-per-year titanium tetrachloride plant at Ashtabula, Ohio has been purchased by Mallory-Sharon Metals Corporation, which in turn is one-third owned by U.S.I. The new acquisition completes the company's integration of facilities for producing titanium — from ore to finished mill products.

New Method for Making Glycidyl Esters

The glycidyl esters — important as perfume and flavor ingredients, and in vinyl plasticizers, stabilizers and resin intermediates — can now be synthesized by using sodium hydride in oil as the condensation reagent in the Darzen condensation reaction.

When employed together with a ketone and a chloroacetate acid ester, NaH in oil is reported to give excellent yields in short reaction times at room temperature, with little or no side reaction.

NaH in oil is a 50% dispersion of 2-25 micron particle size crystals in an inert white mineral oil. It is handled as a solid which can be fed directly into reaction vessels either mechanically or by hand.

NaH in oil is prepared from dispersed sodium and hydrogen at 190-225°C. Its preparation is described in U.S.I.'s brochure "Sodium Dispersions," available on request.

Sept. ★ **U.S.I. CHEMICAL NEWS** ★ 1958

CONTINUED

Ethanol

accelerated, thus increasing the daily rate of protein synthesis and cellulose digestion.

It is thought that this new role for ethanol may find application in other fermentation processes allied with the manufacture of pharmaceuticals and biologicals.

Ethanol Is a Surfactant

Ethyl alcohol is being used as an antifoam to relieve pulmonary edema in humans which sometimes occurs immediately after surgery. Under such conditions foaming in the lungs interferes with oxygenation. Inhalation of 95% alcohol vapor modifies the surface tension of the fluid and reduces the amount of foam in the lung. It is reported to produce immediate and dramatic recovery in most medical cases.

Protective Action in Body

Data is continually being compiled on the action of ethanol as a protective agent in the body. Organophosphate compounds, such as chemical warfare nerve gases and some agricultural insecticides, are known to act by inhibiting the formation of serum cholinesterase by the organism. It has recently been discovered, that ethanol protects against this inhibiting action.

Animal experiments have shown that preadministration of ethanol gives considerable protection against radiation sickness.

Role in Body Metabolism

In the human body, moderate doses of ethyl alcohol have been found to exert a protein-sparing action—improving protein storage and growth. And it has been reported that a positive nitrogen balance is more easily maintained in human convalescence when glucose and amino acids are supplemented with ethanol. Studies on animals show that ethanol also helps mobilize vitamin A from storage depots in the body.

The roles of ethyl alcohol as a vasodilator, as a stimulant, and as an antiseptic and disinfectant are well known, but should be mentioned here to round out the perspective on this U.S.I.-produced compound — one of the most versatile and valuable chemicals the medical and pharmaceutical fields have at their disposal today.

**U.S. Patent 2,808,332 — Anderson and Rapp*

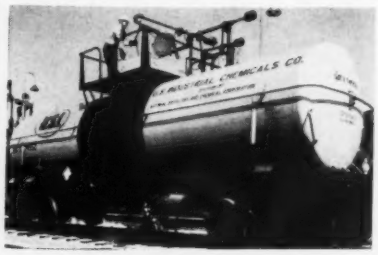
U.S.I. Tank Car Domes Now Color-Coded for Product

The entire U.S.I. fleet of 900 tank cars is being repainted black on light gray, with the traditional U.S.I. oval in black and red. Inherent in the new design is a color-coding system that immediately identifies the type of service for which tank cars are used. Domes of the tank cars are painted any of the following identifying colors:

Solid Domes
- General Service (alcohol, etc.) ..... White
- Ethyl Ether ..... Light Blue
- Chlorine ..... Light Green
- Ammonia ..... Bright Yellow
- Sulphuric Acid ..... Black
- Phosphatic Fertilizer Solution ..... Bright Orange
- Nitrogen Fertilizer Solution .... Bright Red
- Caustic Soda Cars ..... Maroon
- Metallic Sodium ..... Gray

Black Domes with 4 Inch Color Stripes
- Ethyl Chloride ..... Black with Orange
- Olefin ..... Black with Yellow
- Miscellaneous gasoline, waste material ..... Black with Red

This new color-coding system provides U.S.I. with a double check — an at-a-glance opportunity to pick up errors before cars reach the loading rack.



Black, light gray and color-coded dome combine to give new look to U.S.I. tank car fleet. Overall design was chosen to give company identity, dome color to give product identity. Here a newly painted U.S.I. Alcohol tank car with identifying white dome is loaded at Tuscola, Ill.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U.S.I.

N-meta-tolyl phthalamic acid has been discovered to increase plant yields by reducing shock and stress of heat, cold, long rains and drought. Material has been test-sprayed on limas, cotton, cherry trees. **No. 1390**

New booklet on polyethylene film, coatings and molded items for packaging field illustrates advantages of material in terms of economy, sales appeal, protection of product and convenience. **No. 1391**

Zone-melting purifier for organic compounds now on market. Claimed to permit preparation of hyperpure solids in laboratory through slow travel of ring heater up along glass tube containing solid. Impurities concentrate at top. **No. 1392**

New insect repellent, diethyltoluamide, is said to be most effective ever developed for mosquitos, fleas, ticks, chiggers, deer flies. Product now being made with 95% minimum meta isomer content. **No. 1393**

Rare books on science and medicine which can be purchased are listed in new catalog which includes 258 works, alphabetically by author. Catalog covers only a portion of books available. Lists works printed from 1485 to 1929. **No. 1394**

A new aluminum hydroxide-magnesium carbonate co-precipitate dried gel is being sold which, it is claimed, will permit antacid producers to market tablets and powders with the same therapeutic value as the usual liquids. **No. 1395**

Series of ultrasonic units — mass-produced, low-cost, laboratory-size — has been developed for cleaning small delicate parts or assemblies, glassware, apparatus. Also suggested for biological, medical, chemical studies. **No. 1396**

2-Carbethoxycyclopentanone is now available commercially for pharmaceutical and fine chemical applications. Is precursor for many 2-substituted cyclopentanones. Enters into variety of reactions typical of beto-ketoesters. **No. 1397**

3-Sulfolene and some derivatives can now be obtained in research quantities. It is a controlled source of pure sulfur dioxide. As an intermediate, it reacts with chlorine, water, ammonia, alcohol and mercaptans. **No. 1398**

Odor-metering apparatus and techniques for its application to industrial odor-control problems are described in new 4-page brochure. Odor meter measures subjective impressions, must be operated by experienced personnel. **No. 1399**

PRODUCTS OF U.S.I.

ALCOHOLS

Ethyl Alcohol (Ethanol): Specially denatured — all regular and anhydrous formulas. Completely denatured — All regular formulas for industrial use, anti-freeze. Pure alcohol—USP 190°—Absolute, N.F., taxfree, taxpaid.

Proprietary Denatured Alcohol Solvents: SOLOX® — General-purpose. FILMEX® — Special, authorized for certain industries. ANSOL® M — Anhydrous, special blend for lacquers, resins, etc. ANSOL® PR—Anhydrous, special blend with higher ester content and solvency for lacquers, resins, etc.

OTHER PRODUCTS

Organic Solvents and Intermediates: Normal Butyl Alcohol, Amyl Alcohol, Fusel Oil, Ethyl Acetate, Normal Butyl Acetate, Diethyl Carbonate, DIATOL®, Diethyl Oxalate, Ethyl Ether, Acetone, Acetoacetanilide, Acetoacet-Ortho-Chloranilide, Acetoacet-Ortho-Toluidide, Ethyl Acetoacetate, Ethyl Benzoylacetate, Ethyl Chloroformate, Ethylene, Ethyl Sodium Oxalacetate, Sodium Ethylate, ISOSEBACIC® Acid, Sebacic Acid, Urethan U.S.P. (Ethyl Carbamate), Riboflavin U.S.P., Pelargonic Acid, and 2-Ethyl Heptanoic Acid.

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Pharmaceutical Products: DL-Methionine, N-Acetyl-DL-Methionine, Urethan USP, Riboflavin USP, Intermediates.

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Animal Feed Products: Antibiotic Feed Supplements, BHT Products (Antioxidant), Calcium Pantothenate, Choline Chloride, CURBAY B-G®, Special Liquid CURBAY, VACATONE®, Menadione (Vitamin K_3), DL-Methionine, MOREA® Premix, Niacin USP, Riboflavin Products, Special Mixes, U.S.I. Permadry, Vitamin B_{12} Feed Supplements, Vitamin D_3, Vitamin E Products, Vitamin E and BHT Products.

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... about insecticides

HANDBOOK OF PEST CONTROL

by Arnold Mallis

THIS pest control reference volume, containing more than 200 illustrations and over 1000 pages, deals primarily with household and industrial pests, insects, rodents, etc., their habits, identification and latest means of control. It is the most complete work of its kind ever offered in a single volume.

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▲ This edition of HANDBOOK OF PEST CONTROL measures six by nine inches, is sturdily bound and covered in green cloth with gold stamping. Comprising twenty-five chapters and running to a total of 1068 pages, the book is printed on best quality, long-lasting paper.

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Sprayers Can Help Sell Insecticides

(Continued from Page 82)

tions of yesteryear. They may be similar in appearance, but today they are manufactured in jigs, dies, and machined to close tolerances so that each will do its specific job. We have hand sprayers today for the application of space sprays which will break up the material into droplet sizes of 15 microns to 20 microns. They will dispense a volume of up to 35 cc's in 50 strokes and the insecticide will effectively carry from 12 to 15 feet. Thus the average room can be quickly and easily fogged from a single position. Most space sprayers are of the intermitten type; however, some continuous sprayers are effective space sprayers.

Sprayers for residual application are made to produce droplets of from 50 to 200 microns in size. They will dispense from one ounce to upwards of six ounces in 50 strokes according to individual requirements. The spray material will effectively carry 10 to 15 feet from the nozzle orifice. Some individuals have advocated the use of an "ordinary paint brush" for the application of residual sprays. All I can say is this — it would be a hell of a good idea!

There is only one way that the insecticide maker can be certain that his insecticide will be properly and most effectively applied and that is to be sure that it is applied with the right sprayer. The best way we know to make sure that the right sprayer will be used is for the insecticide maker to market a sprayer which has been satisfactorily tested with his product and marketed under his brand name.

There are many large manufacturers whose advertising budgets amount to a million to several million dollars per year. Undoubtedly, this advertising produces results even though there may be little likelihood that the message will be seen at the exact time that the consumer is in the market for that particular product. Brand name recognition is usually the primary purpose.

Think what the insecticide manufacturer's advertising manager would give if he could be assured definitely that the consumer would have his advertisement and brand name in his hands at the

exact moment that he is in the market for the insecticide maker's product! Think also how dismayed the advertising manager would be if, at that particular time, that consumer had his competitor's advertising in his hands!

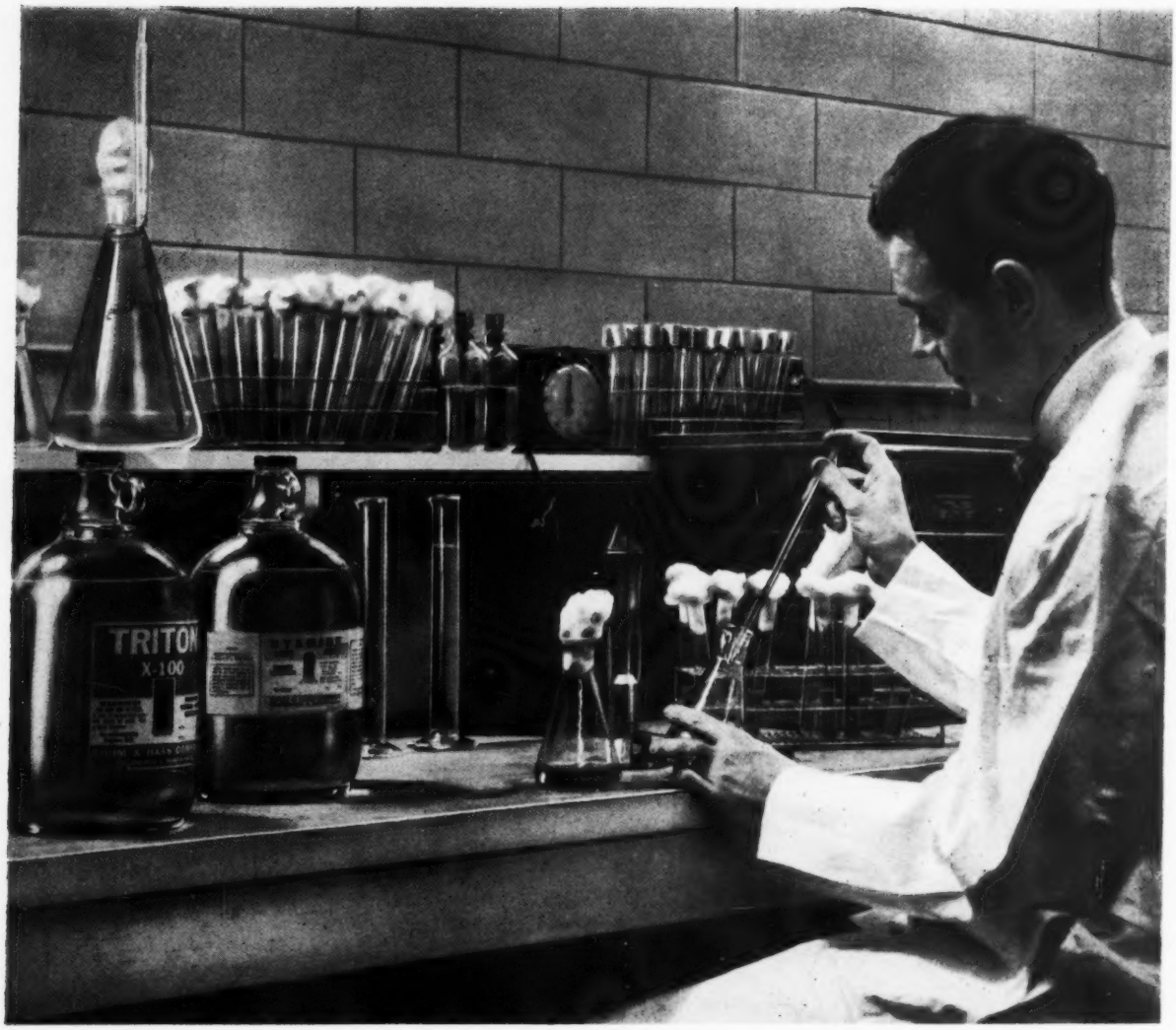
The insecticide maker can choose which advertisement the consumer will have in his hands — and without spending one single cent of advertising budget. The insecticide maker can market a sprayer under his own brand name at a price which will return his cost, plus a service charge and profit.

With the insecticide maker's brand name on a modern sprayer, he can be assured that: —

1. His product, whether space spray, residual spray or livestock

(Turn to Page 111)

Representative group of insecticide hand sprayers which prominently feature the name of the insecticide manufacturer or the trade name of his insecticide. Author says hand sprayer sales have kept pace with aerosol insecticide sprays.



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AEROSOLS...

Methods of Fill · Types · Problems

By Blanton J. Whitmire*

Whitmire Research Laboratories, Inc.
St. Louis

CURRENTLY aerosol production is based mainly on two methods of filling: cold fill and pressure fill. Previously, in the first development of aerosols, all aerosols were produced by the cold fill method. When water based products such as shampoos and shaving creams were introduced it was necessary to develop a pressure fill method. Right now a new method is being developed which is a combination of both cold and pressure fill.

Cold Fill

The basis of cold fill methods (Fig. 1) is chilling the concentrated material down to zero and then running it into open top cans. Next the propellant gas is chilled to approximately 15°F below zero, and run into an open top can. From this point the can is conveyed to a crimping machine where the valve is crimped on. In the meantime, however, the propellant gas has vaporized in the can sufficiently to force out all the air, so by the time it reaches the crimper there is no appreciable amount of air in the can. This is one of the real advantages to the cold filled method. In cold fill loading the aerosol can be produced with only the propellant gas and material remaining in the can which in turn gives a uniform pressure until the container is empty. Also it eliminates most of the oxygen from the air which would create chemical reactions inside the can.

In the pressure fill method

*Based on a talk given before Associated Drug & Chemical Industries of Missouri, April 9, 1959.

Figure 1

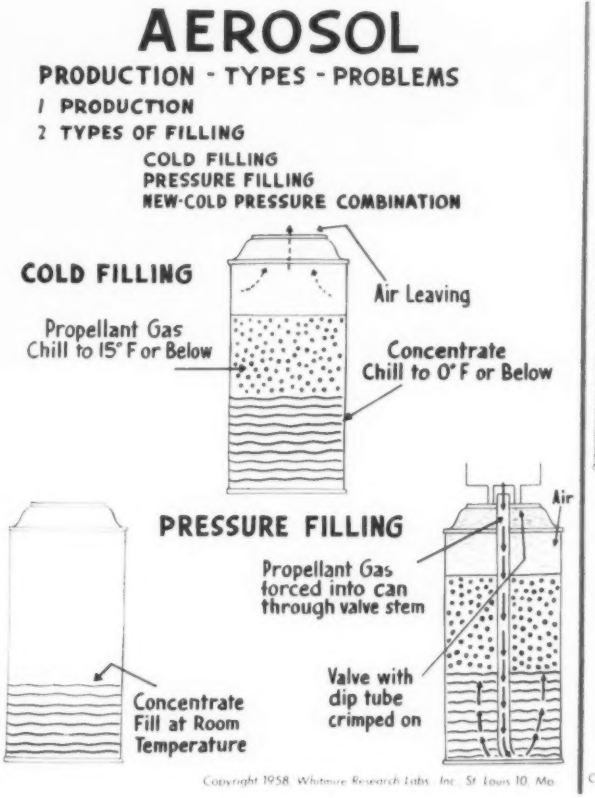
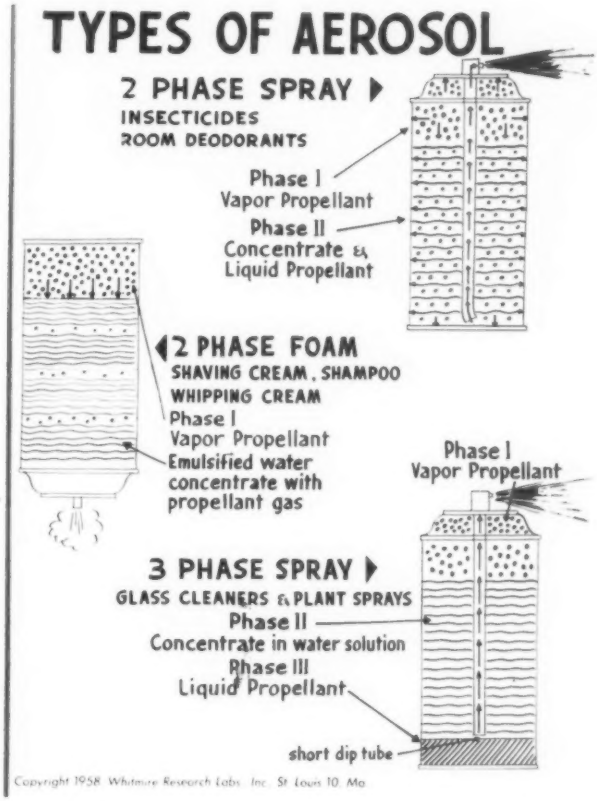
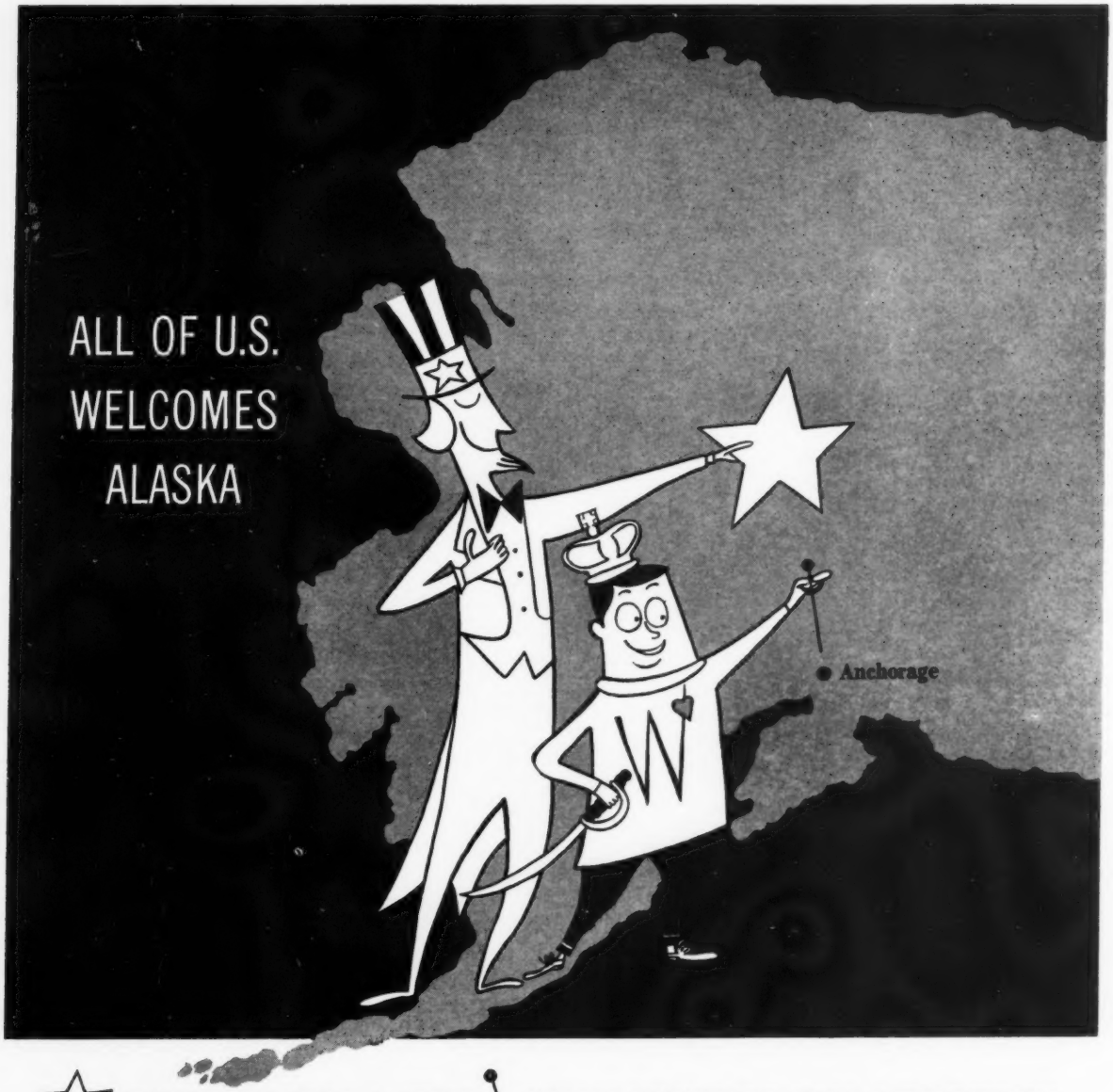


Figure 2





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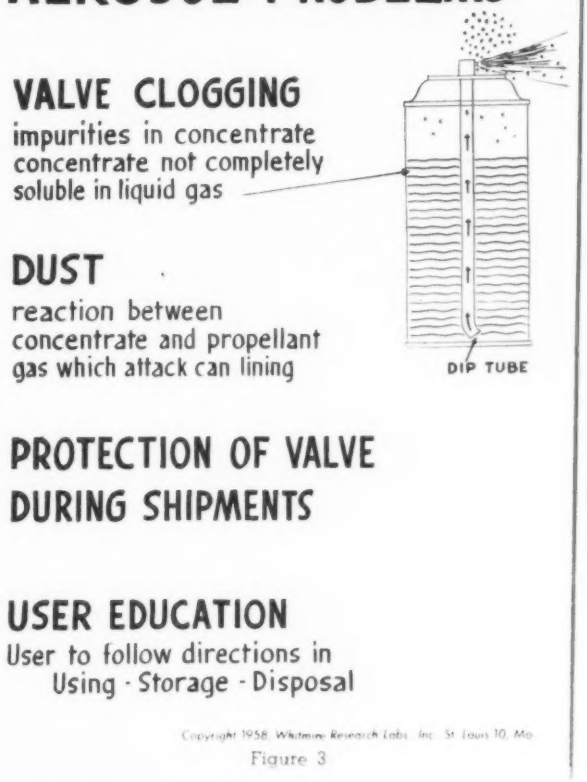

Figure 3

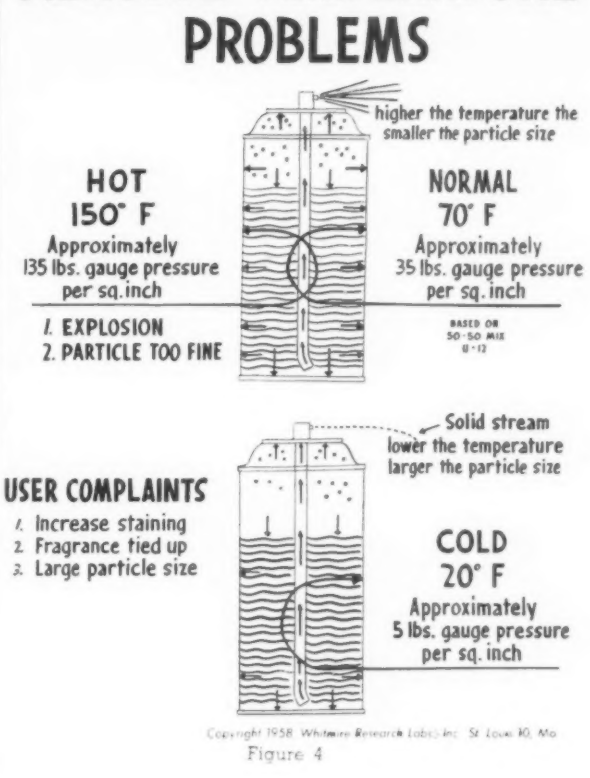

Figure 4

the concentrate material is filled into the open can at room temperature. This is followed by crimping on the valve. The propellant gas is forced into the can through the valve stem. Where an appreciable amount of gas is forced into the can with this method, the air is forced to the top and builds up a false pressure as the gas itself will liquify after its pressure is reached at set temperatures. This is not the case with the air. Of course there are ways of inverting the can and purging this air, but no method has been devised that will do a thorough job of removing all the air from the can.

In products such as shampoos, shaving creams, etc., that must be pressure filled, this is not a great problem. Normally, the concentrate takes up 90 per cent and the propellant gas 10 per cent. Whereas in the true aerosol, the concentrate normally takes up 10 to 15 per cent and the propellant gas 80 to 85 per cent.

Combination Filling

With the new combination pressure and cold fill, the concentrate is run in at room temperature and is then followed by the addition of a small percentage of the propellant gas. Next the valve is crimped and the remainder of the gas is pressure filled. The advantage here is that the first addition of the propellant gas with an open head drives out the air before the valve is crimped and the remaining gas can be filled and still maintain a true pressure. The advantage of this new method is that it would eliminate the expensive refrigeration equipment necessary to chill the concentrated material since only the propellant gas would require refrigeration.

The original aerosols and most of the insecticide and room deodorants today are based on the two phase spray. In phase one the vapor propellant is in the top of the can, and exerts force in all directions.

The liquid propellant gas in phase two is in solution with the concentrated material to be sprayed. When the valve is pressed, it opens up the valve seat. The vapor head pushes the liquid through the dip tube to the valve nozzle where the nozzle and the breaking away of the liquid gas produces the aerosol particles. As this liquid level is reduced a small amount of the liquid gas converts to vapor thereby keeping a uniform pressure in the can until the contents are emptied.

Two Phase Foam

The most common products filled by this method are shaving creams, shampoos and whipped cream. All are based on a water type concentrate. A small amount of gas is emulsified in the solution, and the remainder turns to vapor. When the valve is depressed the vapor forces this liquid through the nozzle at which point the breaking away of the gas within the concen-

(*Turn to Page* 93)

Emulsifiable Fischer-Tropsch Waxes By Shanco

Emulsifiable Fischer-Tropsch waxes are oxidized in the United States by Shanco.

Shanco's modern all stainless steel equipment, plus Shanco's unique production methods, provide finished products of unequaled paleness of color, and the uniformity expected by American industry.

Various members of the Shanco series of waxes are made to plus or minus 2½°F melting point and plus or minus 1 to 2 in acid number.

Shanco Number	Melting Point	Acid Number	Penetration	Color
W-1130	212-215°F	10-12	1-2.5	5-6
W-1122	211-215°F	14-16	1-3	5-6
W-1119	209-213°F	18-22	2-4	5-6
W-1120	208-212°F	24-26	3-5	5-6
W-1123	205-209°F	32-34	4-6	6-7

Shanco waxes act as mutual solvents in paste waxes. They are used in emulsions in paper and textiles, as well as floor, furniture, and automotive polishes. They are also useful for blending with Polyethylene resins to give greater uniformity to the emulsions and increased hardness to the dry film.

For further information contact a Shanco representative or Shanco at Tonawanda, New York.

SHANCO Plastics & Chemicals Inc.

TWO MILE CREEK ROAD • TONAWANDA, NEW YORK

trate provides the churning action that makes the foam.

In addition there is a three phase spray. Some of the newer types aerosols, such as glass cleaners and plant sprays, are based on this.

Phase one is a vapor propellant gas. The second phase is a concentrated water solution. *Phase three* is a liquid propellant gas.

Notice in Figure 2 that the dip tube is cut short above the liquid propellant gas on the bottom. When the valve is pressed the vapor forces the water solution up the dip tube to the valve nozzle where a special mechanical break up device reduces the solution to fine particles. As the liquid level in the water concentrate is reduced, a sufficient amount of the liquid gas on the bottom vaporizes through this solution to the top to maintain a uniform pressure.

The main advantage of the three phase system is its ability to spray water based concentrates, something that was impossible until a method of this nature was developed.

Aerosol Problems

Valve Clogging: No doubt the clogging of valves in spray aerosols is the number one problem. In fact in most cases this comes about through impurities in the concentrate or foreign materials that may be in the empty container, or as the result of a reaction taking place between the concentrate and the propellant gas. As may be seen in Figure 3, any foreign matter in the concentrate would be forced up the dip tube to the small nozzle where an accumulation would soon clog the valve. This problem can be overcome by using filters on the dip tube.

Rust: The combination of the concentrate and propellant gas may produce rust or other chemical reactions which may attack the liner in the can and cause pin point holes resulting in leaky containers.

Incompatible Compounds: This condition is especially liable to occur in the water base type where emulsifying agents; water, detergents and similar materials are used. They can produce a reaction which soon sets up electrolysis in a container.

Generally speaking, clogged valves are the main problem arising from spray type pressure packaged products. (Figure 3) Valves should be protected well during shipment, to avoid damage and possible difficulties later. Trouble can also arise if the consumer misuses the product by failing to follow instructions. If directions call for shaking a product before use, label instructions should clearly indicate this. Conversely, if a product, such as a three-phase plant spray, is not to be shaken, the label should carry a clear and easily read warning to this effect. Another phase of consumer education should include correct directions for storing or disposing of the used container.

Heat: It is well known that when aerosols are exposed to high temperatures they explode. It should also be remembered that aerosol performance is affected by extreme cold. (Figure 4) Most aerosol products are formulated to perform at normal room temperatures of 70° to 80° F. Most spray aerosols have an average working pressure of 35 pounds at 70° F. When the temperature is raised to 150° F., pressure increases to approximately 135 pounds per square inch. Obviously any product designed for optimum performance at 35 pounds pressure has certain disadvantages when its pressure goes up to 135 pounds. The principal danger, of course, is explosion. Secondly, at 135 pounds pressure particle sizes are too small for the product to perform as intended. Generally speaking, the higher the temperature, the smaller the particle size; and the lower the temperature, the larger the particle size.

Cold: What happens when an aerosol is subjected to extremely low temperatures? The 35 pounds pressure of a product at 70° F. drops to five pounds at a temperature of 20° F. Such a product should be delivered at room temperature as a mist, but at the lower temperature would emerge as a solid stream.

Cold is also responsible for the common complaints in winter that aerosol staining increases and that there is a lack of a true fragrance. The fragrance complaint is traceable to the fact that the perfume is tied up in the large particles which will not float in the air. To the user this is a defective aerosol. Thus, it is obvious that it is important to store aerosols at as close as possible to normal room temperature (70° F) both in winter and in summer.

★

MCA Safety Workshop

A chemical industry safety workshop will be held Sept. 25 at the Shamrock Hilton Hotel, Houston, sponsored by the Manufacturing Chemists' Association, Washington, D. C., in cooperation with the Texas Chemical Council.

The workshop will feature audience-panel discussion on various matters pertaining to the safe production, handling and transportation of chemicals and chemical products.

The panel will be composed of specialists from the association's general safety committee. They are:

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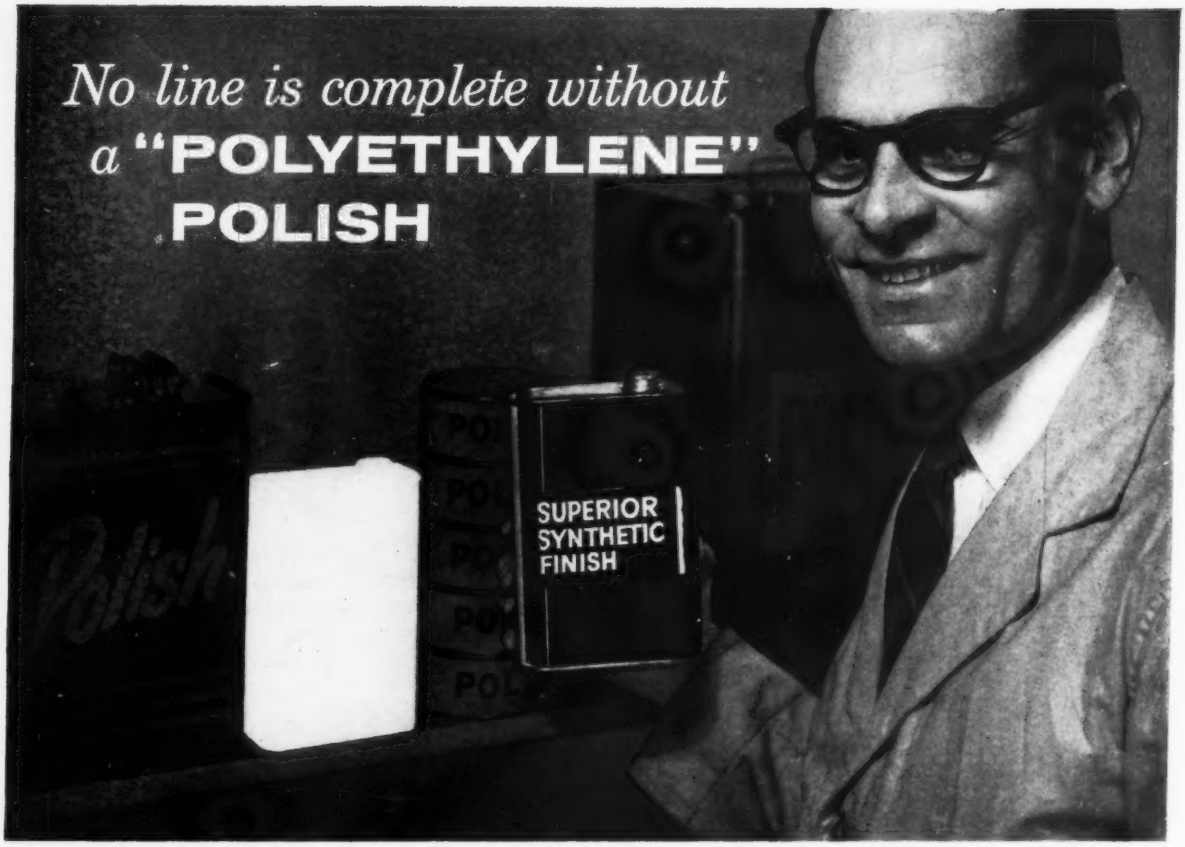
The association is soliciting questions in advance for introduction during the workshop. Questions from the floor at the meeting will also be accepted.

This year's meeting is the second of its kind and part of a continuing MCA program.



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Disinfectant Testing . . .

An adaptation of the phenol coefficient test method to mycobacterium tuberculosis

By Eleanore S. Wright and Vladimir A. Shternov*

Research and Development Laboratories
Lehn and Fink Products Corp.
Bloomfield, N. J.

THE problem of testing disinfectants for tuberculocidal activity is one which has engaged the attention of many workers, and the literature contains varied approaches to the problem. We are concerned only with those test procedures found in the literature in which suspensions of *Mycobacterium tuberculosis* cultures have been mixed with disinfectant solutions and aliquots sampled for survival of the tubercle bacilli (1,2,3,4,5,6,7). In these procedures various strains of *M. tuberculosis* have been used, the preparation of the culture, the time and temperature of exposure to the disinfectant, and the subculture media have been varied. L. S. Stuart of the U. S. Department of Agriculture (8) suggested the use of a heavy suspension of *M. tuberculosis* culture with exposure to the disinfectant as described in the A.O.A.C. phenol coefficient method (9). He recommended that aliquots of these tubercle bacilli-disinfectant mixtures be injected into guinea pigs at the end of the medication period. However he made no definite suggestions as to procedure.

Our objective was to develop a test following the A.O.A.C. phenol coefficient procedure. There were certain requirements which we sought to fulfill in developing the test procedure. The test culture must be a virulent strain of *M. tuberculosis* which had been used by other workers in allied fields. It must grow fairly rapidly on the culture medium selected, retain virulence, and be easily standardized as to the number of viable microorganisms per ml. It must exhibit good and constant resistance to phenol. The use of a liquid medium was considered preferable to a solid medium in that it would further dilute the disinfectant and help eliminate bacteriostatis in the subculture tube. A chemically defined medium, containing as little organic material as possible, would be more suitable than a medium containing an ill-defined organic material. If the same medium could be used for both the test culture and the subculture this would be an added advantage. The medium must be one which could be prepared with relative ease and stored for a reasonable length of time. With these factors in mind the following procedure was finally devised.

Materials and Methods

Media: The culture medium used was a modification of the Proskauer-Beck medium. A suggested formula for this medium was furnished in a personal communication from Dr. Steenken of the Trudeau Laboratory (10).

The formula which we used is shown below.

Modified Proskauer-Beck Medium

Monopotassium phosphate	2.5 g
Asparacin	5.0 g
Magnesium sulfate	0.6 g
Magnesium citrate	2.5 g
Glycerine	20.0 ml
Distilled water	1000.0 ml

— = No growth + = growth

Adjust to pH 7.2-7.4 with Nl NaOH, filter, tube or bottle and autoclave at 15 pounds pressure for 20 minutes.

Part of this medium was placed in round 50 ml. bottles containing 25 ml. of medium and two layers of glass beads. These bottles were used for growing the test culture. The rest of the medium was tubed, 10 ml. per tube, for subculturing samples after exposure to the germicide. Twenty-four hours before the tubes were to be used one per cent bovine serum was added. This was in accordance with the work of Youmans et al. who have shown that the addition of bovine serum to Proskauer-Beck medium promoted subsurface growth of *M. tuberculosis* (11).

Preparation of the Test Culture: The culture used was the virulent strain of *Mycobacterium tuberculosis var. hominis* H37Rv. The culture was grown as a pellicle on the bottles of Proskauer-Beck medium for three weeks at 37°C. At the end of this incubation period, the bottle was stoppered with a sterile rubber stopper and

*A paper presented at the 44th midyear meeting, Chemical Specialties Manufacturers Association, Cincinnati, May 20, 1958.

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shaken until the pellicle was thoroughly broken by the glass beads in the bottles. The culture was filtered through a 200 mesh stainless steel filter and diluted with physiological salt solution to equal the opacity of a 500 ppm La Motte hard water standard. Colony counts of the cultures were made at frequent intervals on Lowenstein-Jensen plates.

Test Methods: In vitro tests—Tubes containing five ml. of diluted disinfectant were placed in a water bath at 20°C. To each tube, 0.5 ml. of test culture, prepared as described above, was added and the tube thoroughly shaken. At the end of a 10 minute medication period, two four mm loopsful were withdrawn in rapid succession and transferred to two tubes of Proskauer-Beck medium containing one per cent serum—one 4 mm loopful per tube. If the disinfectant under test was known to be highly bacteriostatic, Proskauer-Beck medium containing 10 per cent, instead of the usual one per cent, serum was used for subculturing. The phenol resistance of the test culture was included in every series of tests by using the following dilutions of phenol—1:50, 1:60, 1:70, and 1:80. All tubes were incubated for eight weeks at 37°C although there was rarely any change after the fifth week.

To determine whether bacteriostasis in the subculture tubes was an interfering factor in the tests, all tubes which showed no growth at the end of the eighth week interval were reinoculated with 0.01 ml. of the test culture of *M. tuberculosis*. Growth occurred regularly in seven to 10 days in all tubes, even in those containing samples of the germicide far more concentrated than the tuberculocidal dilution. The quaternary tested was an exception to this rule even though 10 per cent serum was used in the subculture broth.

In Vivo Tests: With a few of the disinfectants, *in vivo* tests using guinea pigs as the test animal were made. In general, the recommended use-dilution was the only one tested so that an accurate comparison of this with *in vitro* tests cannot be made. For the *in vivo* tests, 1.0 ml. of the disinfectant—*M. tuberculosis* mixture prepared as described in the *in vitro* method was withdrawn at the end of 10 minutes and injected into the inguinal region of two guinea pigs weighing 250-300 g., 0.5 ml. being injected into each pig. At least six pigs were injected with each sample tested. Control pigs were injected with samples in which water was substituted for the disinfectant.

The test animals were observed for a period of three months, and those surviving were sacrificed at this time. Control pigs were usually sacrificed after five weeks. All animals were autopsied and examined macroscopically and microscopically for the presence of *M. tuberculosis* infection. Particular attention was paid to microscopic examination of the inguinal lymph nodes.

Table II. Dilutions Tuberculocidal in 10 Minutes at 20°C

Disinfectant	Description	Subculture Media		
		P.B.+1% Serum	P.B.+10% Serum	L.J.M.
1) Ethyl alcohol		1:2		
2) Formaldehyde—10%			Undil.	
3) Phenol		1:60	1:60	1:60
4) Coal tar type, p.c. 7.5	Coal tar neutral oils and phenols solubilized by soap.	1:100		1:200
5) Liquid Cresolis Sap. N.F.	Cresol solubilized by soap.	1:60		1:60
6) Synthetic phenolic p.c. 5	o-Hydroxydiphenyl and cresylic acid solubilized by soap.	1:150		1:300
7) Synthetic phenolic p.c. 5	o-Hydroxydiphenyl solubilized by potassium ricinoleate.	1:150		1:300
8) Synthetic phenolic p.c. 10	o-Hydroxydiphenyl and p-tert.-amylphenol solubilized by potassium ricinoleate.	1:300		1:500
9) Synthetic phenolic p.c. 3	o-Benzyl-p-chlorophenol andsodium o-phenylphenate solubilized by soap.	<1:20		
10) Synthetic phenolic p.c. 5	Potassium p-tert.-amylphenate, potassium o-phenylphenate and potassium o-benzyl-p-chlorophenate solubilized by soap.	<1:20		<1:20
11) Synthetic phenolic p.c. 10	Potassium p-tert.-amylphenate, potassium o-phenylphenate and potassium o-benzyl-p-chlorophenate solubilized by soap.	1:150		
12) Pine oil p.c. 5	76.66% pine oil	<1:10		
13) Iodophor (1.6% available iodine)	Iodine solubilized by nonionic detergent.	1:100		1:600
14) Benzalkonium chloride, anhyd. p. c. 250			<1:60*	<1:10

p.c. = Phenol coefficient. * = Approaching bacteriostatic level.

Results

Counts of viable tubercle bacilli found in the test culture ranged from 100,000,000 to 200,000,000 per ml. The test culture contained many small clumps after shaking and filtering so that the actual number of viable organisms was probably greater than the count indicated. If the test culture contained 100,000,000 organisms per ml., the 0.01 ml. loopful of disinfectant-bacteria mixture which was subcultured contained 100,000 tubercle bacilli. This represented adequate sampling if we can assume that the tubercle bacilli were evenly dispersed in the disinfectant.

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In Vitro Tests: The test culture was quite resistant to phenol and gave remarkably consistent results in tests with this disinfectant. The results shown in Table I were obtained in about nine out of every ten duplicate tests.

Table I. Phenol Resistance of M. Tuberculosis H37Hv

Dilution of Phenol	Results in 10 minutes
1:50	—
1:60	—
1:70	+
1:80	+

— = No growth + = growth

Results obtained with a series of disinfectants tested by the procedure are shown in Table II.

The use of Lowenstein-Jensen medium for subculture was dropped early in the testing program for reasons which are obvious from a study of the table. In the large majority of the tests the figures were not comparable to those obtained by the use of the P-B serum media. Since fewer tests were made with the L.J.M. this apparent error may have been due partially to random sampling as it was observed that considerable fluctuation in test results was obtained as the tuberculocidal dilution was approached. For example, disinfectant #7 gave the results seen in Table III.

Table III. Results Obtained with Disinfectant #7

o-Hydroxydiphenyl solubilized by potassium ricinoleate.

Dilution	10 Minutes									
1:100	—	—	—	—	—	—	—	—	—	—
1:150	—	—	—	—	+	—	—	—	—	—
1:200	—	—	—	—	+	+	—	—	+	—
1:300	—	—	—	—	+	+	—	—	+	+
1:400	+	+	+	—	+	+	+	+	+	+
1:500	+	+	+	+	+	+	+	+	+	+

— = no growth + = growth

The tuberculocidal dilution of this disinfectant was reported as 1:150.

Samples #10 gave interesting results and indicated that the test procedure contained a source of error due to the inaccuracies of random sampling. Table IV shows the results with disinfectant #10.

In Vivo Tests: Only three samples were tested *in vivo*. These were samples #6, 7 and 8. In each case only the recommended use-dilution was tested. For samples 6 and 7 the 1:100 dilution was tested

Table IV. Results Obtained with Disinfectant #10

(Potassium p-tert,-amyl phenate, potassium o-phenylphenate, and potassium o-benzyl-p-chlorophenate solubilized by soap)

Dilution	10 Minutes					
1:20			+	+		+
1:40	+	+	+	+		
1:60	+	+	+	+	+	+
1:80	—	—	+	+	—	—
1:100	+	+	+	+	—	—
1:200	+	+	+	+	+	+
1:300	+	+	+	+	+	+

— = no growth + = growth

The tuberculocidal dilution of this disinfectant was less than 1:20

and none of the guinea pigs injected developed tuberculosis. Sample #8 was tested at the 1:200 dilution only and afforded complete protection to the pigs. All controls showed numerous tubercular lesions five weeks after injection.

Discussion

The test procedure described is a relatively simple one and its use should aid in screening compounds for tuberculocidal activity. Emphasis is placed on the fact that it is only a screening procedure. The culture used in the test introduces a very light organic load. Therefore compounds found to be tuberculocidal in Table II may be tuberculocidal only under these test conditions, and not tuberculocidal under actual use conditions if they are particularly susceptible to the addition of organic matter such as sputum, pus, etc. On the other hand, compounds which show relatively little or no tuberculocidal activity by this test procedure cannot be accepted as tuberculocidal.

The test is easy to perform and is suitable for *in vitro* and *in vivo* procedures. There is a great advantage in screening compounds by an *in vitro* procedure before resorting to an *in vivo* test. More dilutions of the disinfectant under tests can be made and tested in a shorter time. The hazard to personnel is less in the *in vitro* procedure. Fewer animals are needed to produce a final answer.

Unfortunately the use of this test procedure resulted in wild plusses or wild minuses. Our decision as to the dilution tabulated as tuberculocidal does not imply that there was not an occasional tube showing growth from a more concentrated solution. These irregularities were more common than those found in the usual phenol coefficient tests using *Salmonella typhosa* or *Staphylococcus aureus*. At present we are unable to explain this phenomenon.

In general, results obtained by this procedure showed agreement with those reported by other workers in the field. In agreement with Smith (3) we found 50 per cent alcohol tuberculocidal. Formaldehyde was found to be tuberculocidal though in higher concentrations than those found by Smith (4,5). The synthetic phenolics were found effective as stated by Tilley et al (1), Klarmann et al (2), and Smith (4,5,) while the sodium and potassium salts were less tuberculocidal in agreement with the work of Smith (5). In disagreement with Smith (4,5) we found the one pine oil disinfectant tested completely ineffective. The iodophor showed tuberculocidal activity but in more concentrated solutions than those found by Lawrence (7). The quaternary ammonium compound tested was ineffective as found by other authorities (4,5,6,).

Acknowledgement: The authors are grateful to Dr. Roderick A. Mundy of the research laboratory of Lehn and Fink for consultation and assistance.

Summary

A relatively simple test procedure has been described for testing the tuberculocidal activity of compounds. This procedure follows as closely as possible the standard A.O.A.C. Phenol Coefficient Test Method. It can be adapted for *in vivo* tests. A table, showing a list of compounds, tested by the method, has been included.

References

1. Tilley, F. W., Macdonald, A. D., and Schaeffer, J. M.: Germicidal effect of orthophenylphenol against Mycobacterium tuberculosis, *J. Agricultural Res.*, 1931, 42:653.

(*Turn to Page* 147)

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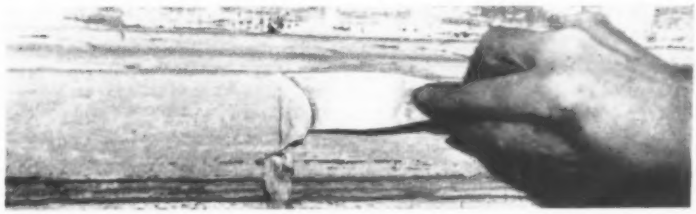

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Down public school corridors, more than 32 million youthful pairs of feet are scuffing up a market for wax emulsion polishes.

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Nonionic Emulsion Polishes

By Kurt J. Wasserman,*
Wax & Rosin Products, New York

THE popularity of water emulsion floor products has gained rapidly over the last decade along with that of light colored floor coverings made of asphalt, linoleum, rubber, vinyl, and similar materials. In the United States nearly all of these polishes have been based on anionic emulsion systems, while European manufacturers have lately found it feasible to make a nonionic wax emulsion which yields a satisfactory final product. This is accomplished by the use of "KPS"* wax, one of the "Hoechst" waxes made in Germany and an emulsifier tailored for the purpose and coded "2106"†. Waxes incorporating this combination are said to exhibit the desirable characteristics of nonionics including excellent gloss and removability without their drawbacks which are poor leveling and water resistance. A comparative empirical evaluation of anionic and nonionic basic wax emulsions is shown in Table I.

TABLE I

Property	Anionic (morpholine oleate)	Nonionic
Self polishing gloss	very good	very good
Leveling	poor	poor to fair
Water resistance	excellent	poor
Film removability	poor	excellent
Appearance and color	translucent, dark, and watery	white to light grey and "wax rich"
Stability	good	excellent
Ease of manufacture	fair	excellent
Freeze/thaw resistance	fair	excellent
Resistance to film discoloration and darkening	poor	excellent

Processing Procedure

Heat wax together with emulsifier to about 100 to 102°C. If direct heat is applied the melt should be kept under constant agitation to avoid local overheating. Add slowly to the homogenous mass with constant stirring part of the water at boiling temperature. Then boil the mixture for several minutes. Then add more rapidly the rest of the water, also boiling and with constant stirring. As an alternative method the wax emulsifier melt, heated to 100 to 110°C may be stirred into the boiling water. But the first indicated procedure is more easily controlled.

The batch should be cooled as rapidly as possible, which may be accomplished by cooling the mixing vessel from the outside or by running the batch over a cooling system into cold water.

To save storage space and handling costs an emulsion of higher concentration, up to 36 per cent solids content, may be made for subsequent dilution with water to the desired concentration. In this case no cold water may be used.

Mr. Wasserman

Progress of the emulsification process is checked by brief immersion of a piece of glass after each portion of water is added. After withdrawal the film running down the glass should be clear and transparent and should opalesce red to brown. Particles of wax should not be discernible.

While the emulsifier improves water resistance of the emulsion more efficiently than other nonionic emulsifiers, this property in the final product can be greatly enhanced by formulation with polymer dispersions, such as polyvinyl acetate, acrylics, or polystyrene.

Emulsifier "2106" is a nonionic surfactant of the ethylene oxide-higher fatty alcohol type with very good emulsifying, wetting and spreading properties. Wax emulsions made with this compound dry evenly and without contraction.

Formulations incorporating this emulsifier do not require the addition of alkali soluble resins which may raise such problems

*Paper presented at the 44th midyear meeting of the Chemical Specialties Manufacturers Association, Cincinnati, May 20, 1958.

†Wax & Rosin Products, New York.

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as lowered freeze-thaw resistance, darkening of film, polymerization on ageing and difficulties in film removal.

Nonionic emulsifier "2106" has been expressly designed for formulations based on "KPS" hard wax. In conjunction with this modified montan wax the manufacturer may use oxidized microcrystalline and oxidized Fischer-Tropsch waxes with acid numbers ranging from 28 to 36. Carnauba wax may be added if desired. A number of typical "KPS/2106" formulations are presented in Table II.

Use of Polymer Dispersions

Floor finishes of high gloss which are water resistant, dirt resistant, tough and durable can be formulated by combining the slightly acid (pH 5 to 6) "KPS 2106" emulsion with acidic PVA and acrylic polymer emulsions. Conventional anionic emulsions heretofore used in such products are alkaline pH and incorporation of these polymers presents a risk of pH drift and may raise instability problems (1). Some typical formulations combining basic wax emulsions of the type shown in Table II with polymer dispersions are suggested below (Table III).

The above polymer formulations, particularly the polishes incorporating PVA and acrylic emulsions were found to exhibit excellent anti-slip properties and soil and scuff resistance. Buffability of such films depends upon the percentage of polymer present in the product, the limit being in the vicinity of 50 parts wax emulsion and 50 parts polymer emulsion. Floor tests showed the films to be non-tacky and abrasion resistant, and to be remarkably free from scratching, powdering, and other shortcomings sometimes found in plastic floor finishes.

"KPS 2106" wax emulsion systems may have a solids content of 36 to 40 per cent. Formulations of this highly concentrated basic emulsion with a 40 to 55 per cent solids polymer dispersion in the proportions shown in Table III yields heavy duty floor wax concentrates, fluid, stable and containing 40 per cent solids, dilutable as required. Advantages in shipping and handling are obvious.

Because of the slightly acid pH of the emulsion system such compounds should be shipped in lined drums and containers. If unlined containers are used addition of a corrosion inhibitor is suggested (Preparation "MN", Naftone, Inc., New York 22; or "Nox-Rust 702" by Daubert Chemical Co., Chicago). Addition of a preservative such as chloro-acetamide is desirable to avoid bacterial spoilage.

Films cast from formulations outlined above may be maintained by damp mopping and removed with conventional floor cleaners and detergents. More than one coat of these polishes may be applied without risk of re-emulsifying the first coat.

(1) Wasserman, K. J., *Soap and Chemical Specialties*, Jan. 1956.

TABLE III
(Per Cent by Volume)

12% Emulsions	A	B	C	D	E	F	G
Parent wax-"2106" emulsifier	(1) 60-80	(2) 60-80	(3) 70	(4) 80	(5) 70	(6) 70	(2) 80
"Darex Everflex MA"* (PVA)	40-20	—	—	—	—	—	—
"Darex Everflex 26982"* (PVA)	—	40-20	—	—	—	—	—
"Rhoplex B-60D"** (acrylic)	—	—	—	20	—	—	—
"Rhoplex D-70"** (acrylic)	—	—	30	—	—	—	—
"Rhoplex WN-80"** (acrylic)	—	—	—	—	30	—	—
"Neocryl A-234U"† (acrylic)	—	—	—	—	—	30	—
"Ubatol U-2003"†† (Polystyrene)	—	—	—	—	—	—	20

*Dewey & Almy Chemical Co., Cambridge, Mass. **Rohm & Haas Co., Philadelphia Pa. †Polyvinyl Chemicals Inc., Peabody, Mass. ††U B S Chemical Corp., Cambridge, Mass.

TABLE II

	(1)	(2)	(3)	(4)	(5)	(6)
"KPS"	12.0	3	9	10	3	3
"Crown 36"*	—	4	—	—	—	3
"Aerok E-100"**	—	—	3	—	—	—
Carnauba wax	—	—	—	2	—	1
"Petronauba D"*	—	—	—	—	4	—
Emulsifier "2106"	1.8	1.8	1.8	2.0	1.8	1.9
Water	86.2	86.2	86.2	86.0	86.2	86.1

*Bareco Wax Co., Tulsa, Okla. **Aerogon Chemical Industries, Inc., New York.

Summary

A group of self-polishing floor waxes of milky white appearance and high gloss properties may be based on "Hoechst KPS" hard wax and nonionic emulsifier "2106". This non-ionic self-leveling system does not require addition of alkali soluble resins. It is compatible and easily formulated with a wide range of polymer dispersions. Water resistance, freeze-thaw stability, buffability and toughness are exhibited by films cast from this type of product. The compound can be sold and shipped in the form of dilutable concentrate.

—★—

Esso Elects Naden

Esso Standard Oil Co., New York, has announced the election of William Naden as president of the firm.

A director of the company since 1946 and executive vice-president since 1955, he succeeds Stanley C. Hope, retired.

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This fact has been proven time and time again in today's market.

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Flemming Announces Tentative Program of Canadian Chemical Specialties Meeting

Some program details of the first meeting of the Canadian Chemical Specialties Manufacturers were released late last month by George E. Flemming of Natural Products Corp., Montreal, president of the organization. The meeting of the newly formed association will be held Thursday and Friday, Nov. 13 and 14, at the Queen Elizabeth Hotel, Montreal.

Topics to be discussed at the meeting include a discussion of the controversial subject of tariff policies by a Canadian government official. In addition, Charles H. Jefferson, Pesticide Administrator, Canadian Department of Agriculture, will speak on labeling legislation, particularly as it applies to chemical specialties. Mr. Jefferson is responsible for all Canadian government labeling requirements. He heads the Pesticide Unit, Feed, Fertilizer and Pesticide Section, Plant Products Division in Ottawa.

Another speaker from Canada's Department of Agriculture, Dr. W. S. McLeod, Pesticide Testing Laboratory, Ottawa, will speak on the technical aspects of household insecticides.

Two other highlights of the convention tentatively scheduled are a display of aerosol products, with prizes for the best packages in different classes, and a display of other packaged chemical specialties.

The six divisions of which the Canadian Chemical Specialties Manufacturers organization is composed will hold separate, concurrent sessions during the two-day meeting. The organization, which was formed earlier this year, is closely patterned after the Chemical Specialties Manufacturers Association and has a working arrangement with CSMA covering exchange of bulletins and an understanding whereby members of either organization can obtain the benefits of membership registration at each other's meetings. The six divisions of CCSM are: aerosol; automotive; disinfecting and sanitizing chemicals; insecticides; soaps, detergents and sanitary chemicals, and waxes and floor finishes.

In addition to Mr. Flemming, other provisional officers of CCSM, include:

First vice-president, G. H. Wood, G. H. Wood and Co., Toronto; second vice-president, A. Robins, Cartier Chemical Co., Lachine, Que.; secretary, R. L. Jones, Colgate-Palmolive, Ltd., Toronto, and treasurer, G. Lang, Connecticut Chemicals (Canada), Ltd., Lachine.

The board of directors is composed of the officers named above and the following:

A. H. Carter, Green Cross Products, Montreal; R. T. Howard, A. H. Howard Chemical Co., Orangeville, Ont.; Dr. G. V. Jansen, S. C. Johnson & Son, Ltd., Brantford, Ont.; R. S. Sweet, Success Wax, Ltd., Quebec City, and A. L. Taylor, R. M. Hollingshead Co. of Canada, Ltd., Toronto.

Michel Chevalier is secretary manager with temporary executive offices at 1005 Sherbrooke St., West, Montreal.

The two-day convention opens with a general business meeting Thursday morning, Nov. 13. At this time the organization will hear an address by its president, George E. Flemming, and elect new officers for the coming year. Tariff policies will be discussed immediately following the group luncheon.

The first of the divisional meetings gets under way Thursday afternoon, Nov. 13, when the insecticide division convenes to hear a discussion of a proposal to collaborate with the Canadian Beautification Association's spring campaign, which sponsors activities in 600 communities across Canada. Topics to be discussed include: 1. a general outline of the aims and objections of CBA; 2.) community mosquito or insect control; 3.) community rodent control, and 4.) community weed control.

In a simultaneous, but separate, session the waxes and floor finishes division meets the same afternoon to hear a discussion of recent trends in aqueous floor polishes. "Practical Considerations in Film Improvement of Plastic Floor Dressings" is another topic slated for discussion at this session.

Two subjects are tentatively listed for discussion during the first session of the aerosol division at 3:15 p.m., Thursday, Nov. 13: "Silicones in Aerosols" and "Development of Metal Aerosol Containers."

Meanwhile, elsewhere in Montreal's recently completed Queen Elizabeth Hotel, the soaps and detergents division will convene to hear a paper on packaging and another on marketing.

Company and industry sponsored motion pictures are expected to be shown throughout the entire afternoon of Nov. 13, and the following morning.

The day's activities will conclude on a social note, with open house parties to be held in suites and rooms of supplier firms beginning at 6:00 p.m.

Four divisional meetings are scheduled for Friday morning, Nov. 14. Two divisions, soaps and detergents, and disinfecting and sanitizing chemicals, get under way in simultaneous, separate meetings at 9:30 a.m.

The second sessions of the insecticide, and waxes and floor finishes divisions begin at 11:00 a.m. Legislation and the technical aspects of household insecticides are among the topics expected to be covered. The "Development, Production and Synthesis of Fisher-Tropsch Waxes" is the title of a paper tentatively indicated for the waxes and floor finishes session. A discussion of new polymer type finishes is also tentatively scheduled for this divisional meeting.

Following a group luncheon on Friday, Nov. 14, a meeting will be held by: Aerosol, disinfecting and sanitizing chemicals and automotive divisions. Nitrogen as a propellant and the technical aspects of aerosol packaging are ten-

(*Turn to Page* 111)

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Cowles DETAMIDE 95 (minimum assay meta isomer—95%) is in production now.

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Highly resistant to perspiration and normal wear-off, Cowles DETAMIDE is a colorless liquid with a pleasant cosmetic fragrance.

Full technical information and prices upon letterhead request.

DETAMIDE 95 is packed in 5 gal. and 55 gal. drums—available one drum to a carload.

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BARECO WAX	Melting Point °F.	Penetration	Color N. P. A.	Acid No.	Sapon. No.
Petrolite C-700...	190 Min.	4 Max.	1½ Max.	Nil	Nil
B-Square 190 A..	190-195	2-7	1½ Max.	Nil	Nil
Petrolite C-1035..	195 Min.	2 Max.	1½ Max.	Nil	Nil
Petronauba C....	180 Min.	7 Max.	3 Max.	22-28	50-60
Petronauba D....	185 Min.	5 Max.	6 Max.	20-28	50-60
Petronauba H....	195 Min.	1-3	4 Max.	15-25	50-60
Petrolite C-15....	180 Min.	4-6	4-5	15-17	45-55
Petrolite C-23....	180 Min.	4-6	4-5	20-15	55-65
Petrolite C-36....	180 Min.	5-7	4-6	30-35	75-85
Petrolite PE-100..	195-200	2-3	4-6	15-20	45-55
Petrolite R-50....	190-200	2 Max.	4½ Max.	40-50	65-80
Petrolite P-20....	210-220	2 Max.	3 Max.	Nil	Nil

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(*From Page* 107)

tatively listed for discussion before the aerosol division.

A cocktail party, beginning at 6:00 p.m., and banquet, with special speaker, floor show and dancing, to start at 7:00 p.m., wind up the two day meeting.

A special program has been arranged for the women attending the convention. On the first day of the meeting a sightseeing tour of Montreal and a luncheon at St. Helen's Island are planned. A tour of the Queen Elizabeth is scheduled for the morning of the following day. Also listed are the cocktail party and banquet.

Hotel reservations are to be made through Nelson Verge, rooms division manager of the Queen Elizabeth.

Registration for the meeting is being handled by Mr. Chevalier. Rates are as follows: advance registration, $40; registration at the meeting, $45; non-member registration, $60, ladies, $15. CSMA members pay CCSM member rates. Luncheons on an individual basis are $6.00 each and the cocktail party and banquet tickets are $15 each.

Soap Sales Figures

(*From Page* 53)

of American Soap and Glycerine Producers, the quarterly sales statistics are based on reports from 59 soap makers and of 32 detergent manufacturers. For the first half of this year sales of synthetic detergents, both solid and liquid, are reported at 1,427,280,000 pounds valued at $349,074,000, a 1.7 per cent increase in tonnage and 7.8 per cent growth in value over last year's figure. Synthetics accounted for 72 per cent of the total combined soap and detergents market.

During the first half of this year sales of soaps, both liquid and solid, amounted to 538,197,000 pounds, off 8.5 per cent from the tonnage sold last year. Dollarwise, sales totalled $146,587,000, down 4.4 per cent from last year's figure. Toilet soap sales continue to creep up, showing an 0.9 per cent increase over the corresponding period of last year. Shaving cream sales are up two per cent.

Sprayers Help Sell

(*From Page* 87)

spray, is properly and effectively applied.

2. He can be sure his advertisement is in the customer's hands at the exact time he is in the market for the product. When he empties the last of a can of insecticide, the can is thrown away and the insecticide maker's brand identification may be forgotten.

   However, if the sprayer is identified with the insecticide maker's brand name, he has that *manufacturer's* advertisement in his hands at the exact moment the last drop is used and he is in the market for more insecticide. It should be pointed out that about 50 of the sprayers produced in the United States are made under insecticide manufacturer's brand names, so if the insecticide maker does not give him at least an opportunity to buy a sprayer with his brand name, there is better than 50 per cent chance that he will have one from a competitor.
3. Oil-based livestock spray is increasing in volume. If an insecticide maker is now marketing, or contemplates marketing such a product, consideration should be given to the importance of proper application. To assure best results and to avoid injury to the animal, the volume of spray and droplet size should be rigidly controlled.

Remember — in order to make the insecticide do the whole job for which it was formulated; to give the consumer the most value for his dollar; and for the insecticide manufacturer to be assured that the consumer will ask again for an insecticide by brand name—market an effective sprayer carrying the insecticide maker's brand name and with his insecticides.

Remember too — price is secondary — an effective sprayer will (1) break up the spray material into the most effective droplet size; (2) dispense it easily in sufficient volume; and (3) dispense it with sufficient force to carry it to the insects to be killed . . . . and most important, bring customers back for more of that kind of spray!

Nonionic Detergents

(*From Page* 55)

ionics because of their wide compatibility with anionics, their excellent liquid soil emulsification properties, their plasticizing and solvent power for other type ingredients, their general stability to alkaline conditions and their neutrality. It is estimated that 40 million pounds of nonionics are going into these classes of compounds.

This does not mean that all nonionics generally have these properties. (The esters, for example, are very unstable to alkaline conditions.) Rather, nonionics may be selected from an almost infinite number of types that have these properties or combinations of them as may be required.

In household chemical specialties formulations nonionics play an important role as emulsifiers. Products in which nonionics are used for this purpose include cosmetics, spray insecticides, solvent cleaners and floor cleaning and dressing compounds. It is estimated that 40 to 50 million pounds of nonionics are used each year in these applications.

Summing up, then, it appears that probably 180 to 200 million pounds of nonionics annually are finding their way into household products.

The two most promising fields for expansion at present appear to be for use in synthetic detergent toilet bars and heavy duty liquid detergents. Conceivably these could add several hundred million pounds to production totals of the nonionics within the next five years.

Give your aerosol insecticides
EXTRA SALES APPEAL
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Today's modern trend in consumer preferences demands a pleasant as well as functional insecticide and mothicide. A Givaudan fragrance — custom-made to fit your particular needs — will give your products that *extra* sales appeal that is so important.

As the largest producer of perfume materials in America, Givaudan maintains special laboratories devoted exclusively to the development of new and finer aerosol fragrances and the solution of problems in aerosol perfuming.

Our staff will gladly recommend, adapt or custom-tailor a fragrance that will give your aerosol insecticides a fresh, distinctive appeal in this fast-growing, highly competitive market.

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Microbiological aspects of

Pressure Packaged Foods

By G. L. Hays and D. W. Riester*

American Can Co.

Maywood, Ill.

WHIPPING cream was the first food to be packaged in pressure containers. As early as 1937, (1) this product was packaged for commercial trade in heavy cylinders which were fitted with dispensing valves. The microbiological quality of the product was followed closely by Prucha. (9) He observed a manyfold higher colony count in whipped cream dispensed by dipping than in pressure whipped cream. These differences were due largely to poorer quality raw materials and to contamination during handling and serving the hand dipped product. As would be expected from the improved sanitary practices, the pressure whipped cream had much better keeping qualities than regular whipping cream held under the same conditions of refrigeration. Sanitarians welcomed this improved method of handling whipping cream.

Whipping cream for the consumer trade was first packaged in pressure cans in 1950. The market for whipped creams and whipped toppings has expanded tremendously in the past seven years. Over 60,000,000 cans (6) of these products were sold during 1957. They are usually pressurized to about 100 to 105 psig. with a combination of 85 per cent nitrous oxide and 15 per cent carbon dioxide. Whether or not these or other gases exert a preservative action on pressurized food products will be discussed later.

The outstanding success of whipped cream and the general acceptance of pressurized packages of non-food items has stimulated industry interest in the possibility of packaging many types of food in pressure containers. As yet, commercial production of these new items has been relatively small, partially because of technical problems and partially because of economic unknowns. One important technical problem for future resolution is microbiological control of pressurized foods and studies are currently underway in this area. Experience gained over the past 25 years in the packaging of conventional canned foods clearly delineates what the nature of the control problems will be with respect to pressurized foods. Pending final resolution, certain of these microbiological aspects are discussed here.

Microbial Flora

A general reviewing of the microbial flora of the various classes of canned foods may be helpful in assaying possible health or spoilage hazards for the canning of pressurized foods. The main classes of canned foods are:

1. High-acid, low-soluble solids

Potential pressure packaged foods are numerous as can be gleaned from this limited list of products lined up by American Can Co.

*Paper presented at the 44th midyear meeting, Chemical Specialties Manufacturers Association, Cincinnati, May 20, 1958.

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plus gloss scuff resistance durability leveling anti-slip

#65 *Refined white **shellac***

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High on the list of food products expected soon to be released for the consumer market is pressure packaged salad dressing. Product shown was packed experimentally by American Can Co.

foods such as berries and fruit. Their pH is usually under 4.1.

2. High-soluble solids, high-acid foods or high-soluble solids, low-acid foods such as preserves, concentrates, syrups and sweetened condensed milk. The soluble solids to water ratio in these foods ranges from about 60 percent for syrups to as high as 64.5 percent for sweetened condensed milk.
3. Low-acid, low-soluble solids foods such as vegetables and dairy or meat products. The pH is above 4.5 and many are in the pH range of 6.0 to 7.0.

In the first class of foods (berries and fruits) the spoilage agents are usually yeast or non-spore forming bacteria. These organisms are readily destroyed in these acid foods by heat treating or processing the product to a temperature of 170°F. and holding at that temperature for a few minutes. There is a subdivision of the acid foods which have higher pH values such as tomatoes, figs, pears, and ripe pineapple. In addition to the yeast and non-spore-forming organisms, these canned foods may be spoiled by the growth of comparatively heat-resistant, spore-forming organisms *(Clostridium butyricum* and *Bacillus coagulans)* which grow readily at pH 4.3 to 4.4.

The important spoilage types of the second grouping of foods (preserves, concentrates, and syrups) are yeasts and molds. While the majority of these organisms are non-heat-resistant (a few minutes at 170°F. usually being sufficient to destroy them), molds will grow in saturated sugar solutions and certain yeasts have caused spoilage in honey.

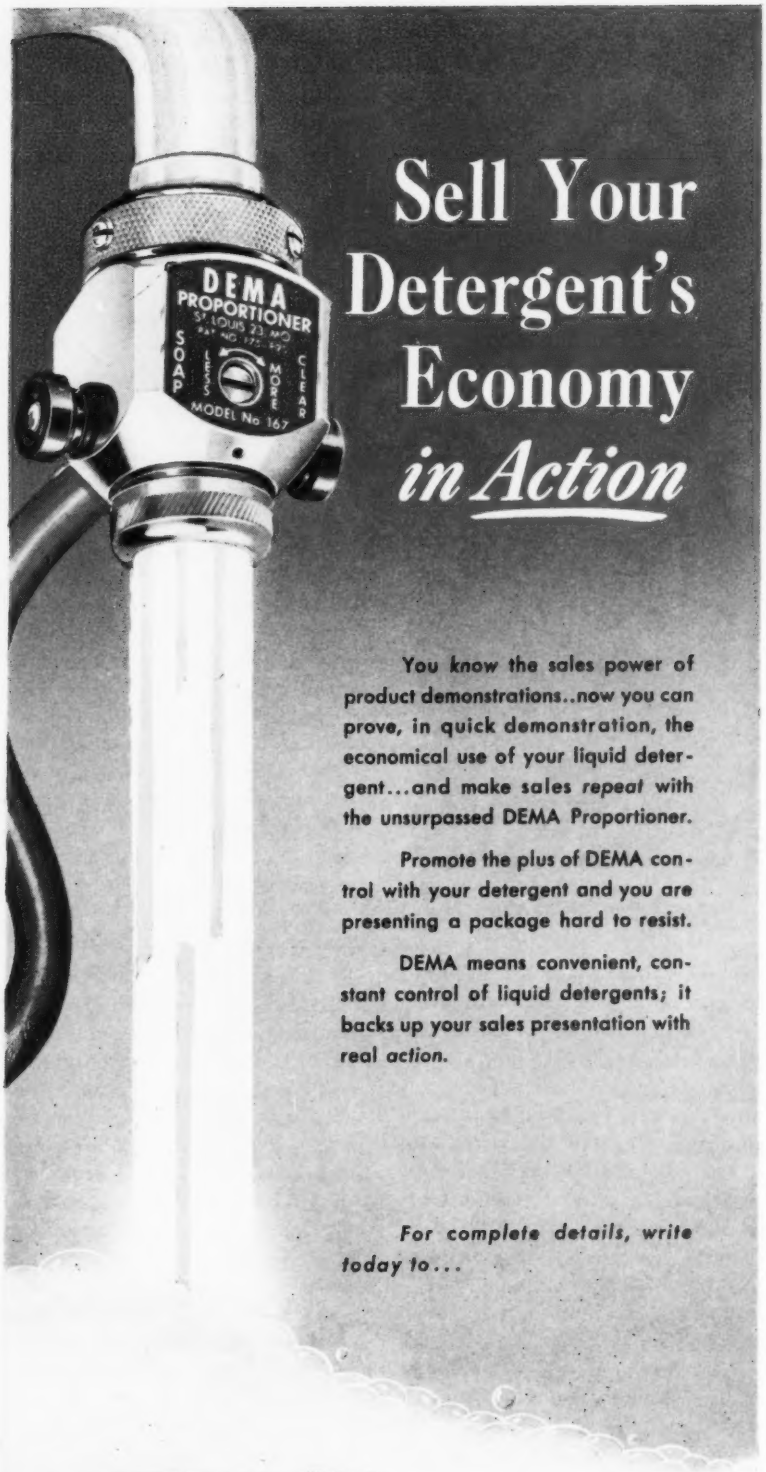
Spore-forming bacteria are the most important types encountered in the spoilage of the low-acid, low-solids canned foods which comprise the third group. Of these heat-resistant organisms the putrefactive anaerobe, *Cl. botulinum* is of paramount importance. All low-acid foods must be processed to the extent that the spores of *Cl. botulinum* are destroyed. If the spores of this organism are not killed, they may germinate and produce a very potent toxin in these canned foods. The ingestion of foods containing this toxin may result in botulinus poisoning which has a fatality rate of about 65 percent.

The low-acid canned foods may become contaminated after the container has been opened. If such food is held for a day or so under improper refrigeration, pathogenic non-heat-resistant organisms such as micrococci, streptococci or salmonella may grow in the food and produce toxic products. The ingestion of foods containing these toxic products, while of a much lower order of toxicity than the toxin of *Cl. botulinum*, will cause acute illness.

Processing Requirements

After this brief review of the types of organisms which can cause spoilage let us consider the selection of processes to insure the safety of canned foods for human consumption. Canned foods are not processed to attain absolute sterility but to destroy those organisms which could prove harmful upon ingestion and those organisms which could cause spoilage when cans are held unopened under normal storage conditions. Food technologists term this condition of relative sterility, "commercial sterility."

High-acid canned foods such as berries and many fruits are usually filled hot (180°-190°F.) into containers and the cans closed. After closure, the cans are inverted and held for a short period so that the hot product will destroy any spoilage organisms which may have been in the container. The cans



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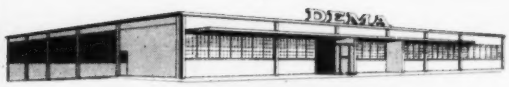

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are water cooled after the holding period. Slightly less acid products such as tomatoes, tomato juice, pears, etc. require a somewhat more severe process to render them "commercially sterile." These products whose pH may be 4.3 or above, are either filled at higher temperatures (195°-205°F.) and water cooled, or filled at about 170°F. and air cooled, or filled at 190°F. and given a processing sufficient to destroy the spore forming organisms, *Cl. butyricum* and *B. coagulans*, which can cause spoilage.

The high-solids, high-acid products are filled into cans at temperatures ranging from 170°-190°F. The closed cans are inverted and held for a short period before water cooling. This packing procedure will destroy the yeasts and molds which cause spoilage in these foods. Low-acid syrups are also canned successfully by this packing procedure. The high-solids, low-acid product, sweetened condensed milk, is filled cold into cans. The high-soluble solids content of this product inhibits bacterial spoilage, but molds can grow if sufficient oxygen is present. Packers try to prevent mold growth known as "button formation," by careful sanitation; by completely filling the hole and cap cans used for this product; or by drawing a high vacuum, when sanitary style cans are used. The only positive method of controlling "button formation" in sweetened condensed milk that the authors have observed, is the use of carbon dioxide or a mixture of carbon dioxide and nitrogen in the gas flow closure of this product. Headspace oxygen is not only displaced by these gases during the can sealing operation but carbon dioxide in high concentration is apparently toxic to molds.

The pH values of low-acid, low-solids foods (meats, vegetables, dairy products) are above 4.5; many of them are nearly neutral and fall in the pH range of 6 to 7. Unless they are to be refrigerated, all low-acids foods must be given a pressure process sufficient to destroy the heat resistant spore-forming

spoilage organism. These processes may range from several minutes to over an hour, mainly at temperatures of 240° to 250°F. Instead of processing the products in closed containers in retorts, many of these foods may be sterilized by means of heat exchangers. The sterile product can then be filled into sterile cans in a sterile chamber and the containers closed with sterile covers by a procedure known as "aseptic canning." Certain low-acid foods such as onions, broccoli and artichoke hearts, the quality of which is impaired by a pressure process, are usually acidified to a pH below 4.5 and given a boiling water cook. This pH value is sufficiently low to prevent the growth of *Cl. botulinum*.

Regardless of any possible preservative action of the pressurizing gases, non-refrigerated foods packaged in pressure containers will have to be processed in a manner similar to the methods outlined above or by methods yet to be perfected which will render the food "commercially sterile."

Gases Act as Preservatives

Considerable data have been accumulated on the bacteriostatic and fungistatic properties of carbon dioxide and nitrogen at pressures up to about three atmospheres. Yet very little data are available on these properties of the gases at the pressures used in pressurizing foods.

Golding, (4) Ruyle, et al, (10) and many other investigators have observed that high concentrations of carbon dioxide are toxic to molds. On the other hand, nitrogen was not observed to be toxic for molds (10) as 99.5 percent nitrogen in the presence of 0.5 percent oxygen did not inhibit mold growth in an acid medium.

Prucha, et al; (8) observed that milk held under 60 pounds carbon dioxide pressure did not sour for nine days, while untreated milk became sour within thirty hours. These data indicate that carbon dioxide acts as a preserva-

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tive rather than as a bactericide; it will retard the growth of bacteria but does not kill these organisms.

The above data would indicate that mold growth should not be a problem in foods pressurized with carbon dioxide. Due to the solubility of carbon dioxide, this gas can only be used to produce whipped or foam products.

Prevention of Mold Growth

The non-toxicity of nitrogen to molds (2) (3) (10) is an important factor to be considered when this gas is to be used as the propellant in pressurized foods. It is not practical to remove oxygen either by mechanical or thermal methods to a low enough level so that nitrogen will inhibit mold growth. In carefully controlled experiments Golding (5) and Miller and Golding (7) using mixtures of air and dry nitrogen found that the amount of oxygen dissolved in the medium was the controlling factor in the growth of molds. They observed the germination of all mold spores studied, when the dissolved oxygen content was at least 0.08 volumes of oxygen soluble in 1000 volumes of water. Pressures between 0.5 and 2.0 atmospheres did not affect the oxygen requirements of the molds studied. Higher gas pressures probably would not materially affect the oxygen requirements of molds.

The solubility of oxygen from air in sugar solutions (11) has been determined at 77°F. as shown in table I.

Table I

Concentration of Sugar Solution (°Brix)	Oxygen from Air Soluble in Sugar Solution (cc/liter)
0.0	5.80
17.1	4.39
34.2	3.20
68.4	1.84

The dissolved oxygen content of syrups prepared for pressure packing would approach that of sugar solutions of similar concentrations, although some oxygen will be driven out of syrups by heating to near boiling. Syrups filled hot into cans to render these products "commercially sterile"

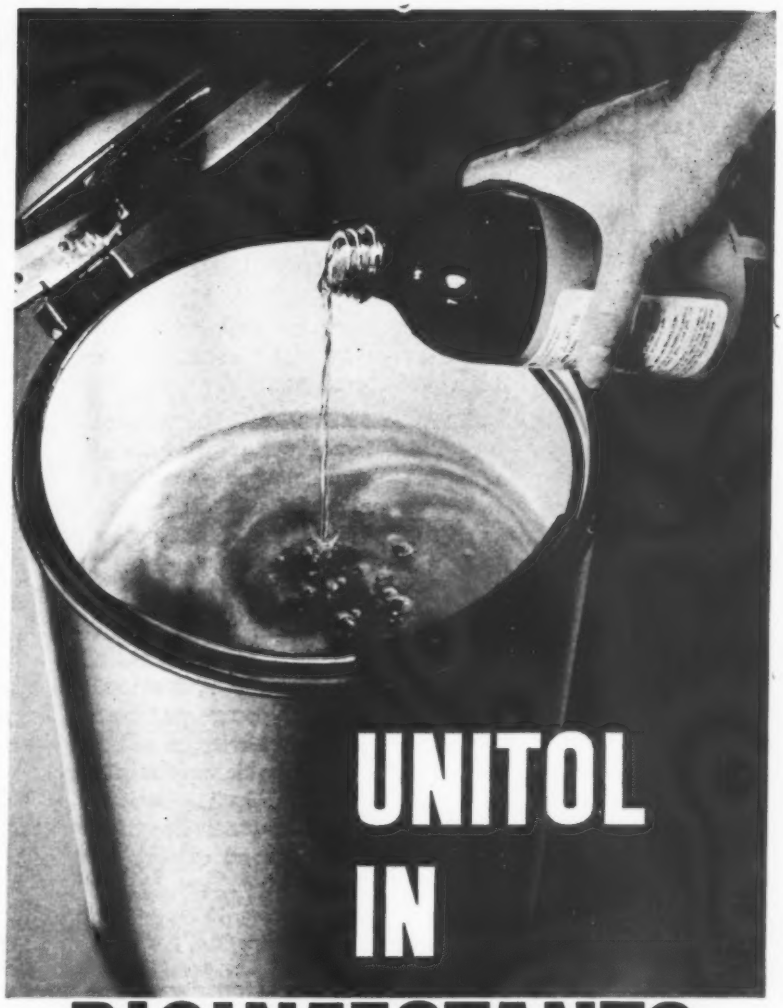
still contain enough dissolved oxygen to support mold growth. Commercial experience has indicated that if "commercially sterile" syrups are cooled before gassing, molds will grow in the product if it should be accidentally contaminated during this operation. The officially permissible amount of sodium benzoate is effective only in acid foods. This preservative should not be relied upon to prevent spoilage in low-acid syrups. Therefore, these products should be gassed while hot, if at all possible.

While the authors have not experimentally determined the effectiveness of ascorbic acid or glucose-oxidase in the prevention of mold growth in pressurized syrups, theoretically these oxygen acceptors should reduce the dissolved oxygen content below the growth range of molds. Should these materials prove effective and their commercial use receive official acceptance, they could be added to products which for some reason could not be gassed hot.

Methods of Packaging

The refrigerated, pressurized low-acid foods such as whipped cream and whipped toppings are filled cold into cleaned containers after the product has been pasteurized. Care is maintained to avoid accidental contamination during the gassing cycle.

Many more types of organisms will grow in low-acid, low-soluble solids foods than will grow in the other classes of foods. Some of these organisms are not only capable of causing spoilage, but they are capable also of producing food poisoning. Thus, this category when not refrigerated will be more difficult to package in pressure containers than are the high-acid or high-soluble solids foods. Not only will these foods have to be rendered "commercially sterile" but the container and valves will have to be sterilized. If these products cannot be filled into containers and gassed before being subjected to an adequate process, then



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Color — APHA	20 max.	40 max.	100 max.	100 max.
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Equivalent Weight	61–63	104–106	140–145	147–152
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MEA Content	—	1.0 wt. % max.	1.5 wt. % max.	—
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the most promising method of packaging will be a form of "aseptic canning." The essential steps would be to fill the sterilized product into sterile containers, mechanically insert sterile valves and pressure with sterile gas in a sterile chamber. Variations of this method are now being used to package sterile whipped cream.

Not only the design but the choice of materials used in the manufacture of valves for dispensing pressurized low-acid, low-solids foods will be important factors in the successful packaging of this class of foods. The valves must be constructed of materials that can withstand sterilizing temperatures. The valves preferably should be designed so that they not only dispense the food satisfactorily, but also virtually eliminate food residues from the exposed part of the valve after use. Substantial food residues may become contaminated and cause subsequent spoilage.

The reformulation of foods so that they can be dispensed from pressure containers should be done with caution. For example, changing the formula of the non-pressurized cheese product, welsh rabbit, by replacing some of the cheese with milk solids changes the process requirements of this product. Pressurized cheese dips may be similarly affected. Lowering the soluble solids content of syrups may also change their process requirement.

Summary

In summary, it may be stated that the process requirements of pressurized foods will be essentially the same as for comparable foods packaged in hermetically sealed containers under vacuum.

High-acid or high-soluble solids foods should be gassed hot in order to prevent spoilage in these pressurized products.

Unless low-acid, low-solids foods intended for non-refrigerated distribution can be gassed before being processed, some modification of the aseptic canning technique will probably be required to prevent spoilage.

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Chemway Names Janes

E. Roth Janes has been elected vice-president for manufacturing of Chemway Corp., Wayne, New Jersey, it was announced last month by Charles T. Silloway, president.

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A lecturer and writer in the field of cosmetic technology, Mr. Kass has been associated with the firm for over four years as research director.

"Dreft" Led the Way

(*From Page* 50)

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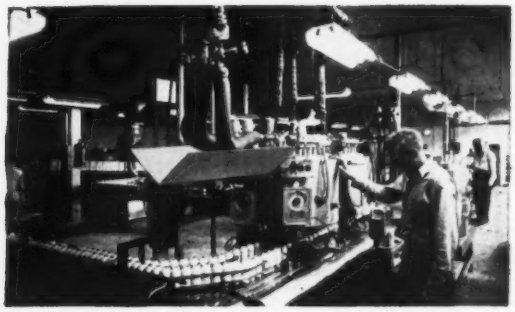

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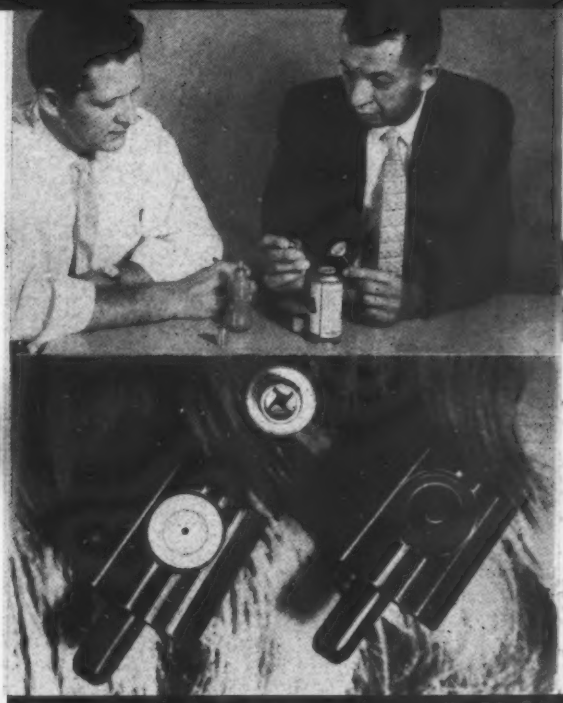

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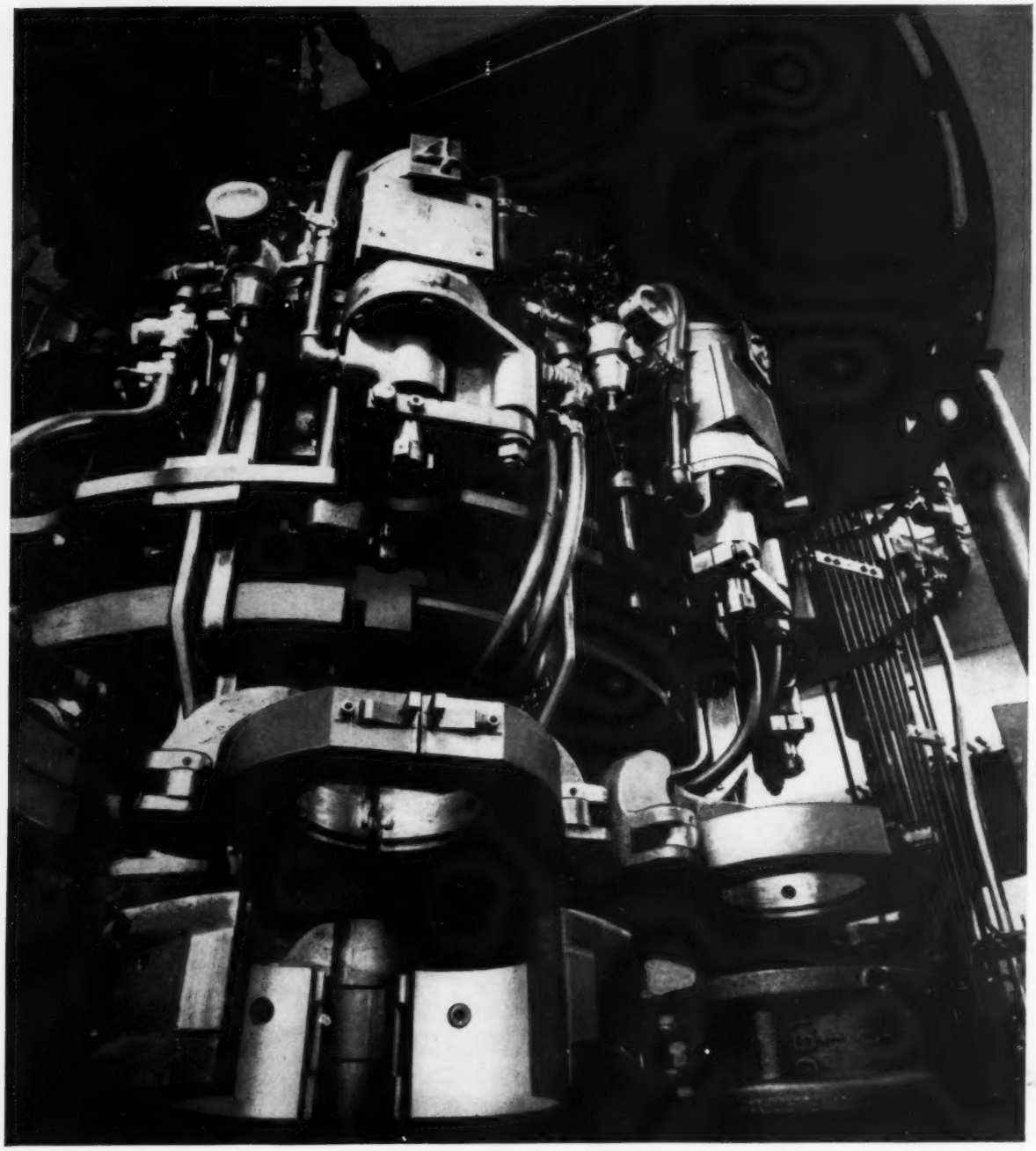
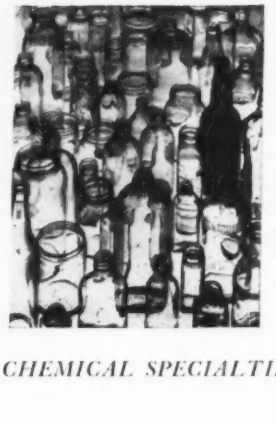


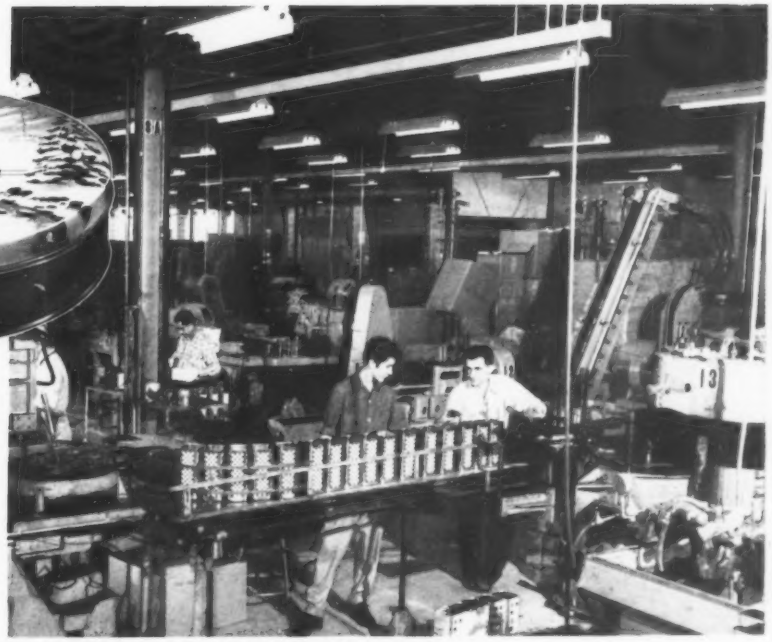
A NEW ENGINEERING BREAKTHROUGH in glass-making has been achieved by Knox engineers and scientists in the design and development of this new JK Machine. Another example of planned progress at Knox, the new JK is now furnishing Knox customers with more precise, more even-walled containers. It can also produce high-strength light-weighted glass. Its new standard in flexibility allows it to efficiently furnish wide-mouth containers in almost any size, in any quantity, to any specification. For more information, contact:



KNOX GLASS INCORPORATED · KNOX, PENNSYLVANIA

A Money-Saving News Advertisement

Virtually every round, square, oval or oblong shape of "specialty" metal container, handsomely decorated by modern color lithography, is produced by Olive Can Company. The three shown above are typical examples.



A partial view of one of Olive Can Company's high-speed automated production lines. An important feature of each line is the short set-up time required to "switch" runs from one type container to another.

Low Cost "specialty" metal containers

How Olive Can Company's new, highly automatic production facilities . . . and 46 year file of stock design tins afford tremendous metal container economies

Increased emphasis is being placed by Olive Can Company executives on their firm's ability to offer customers a wide variety of stock container design tins to help cut costs in introducing new products and repackaging "standards".

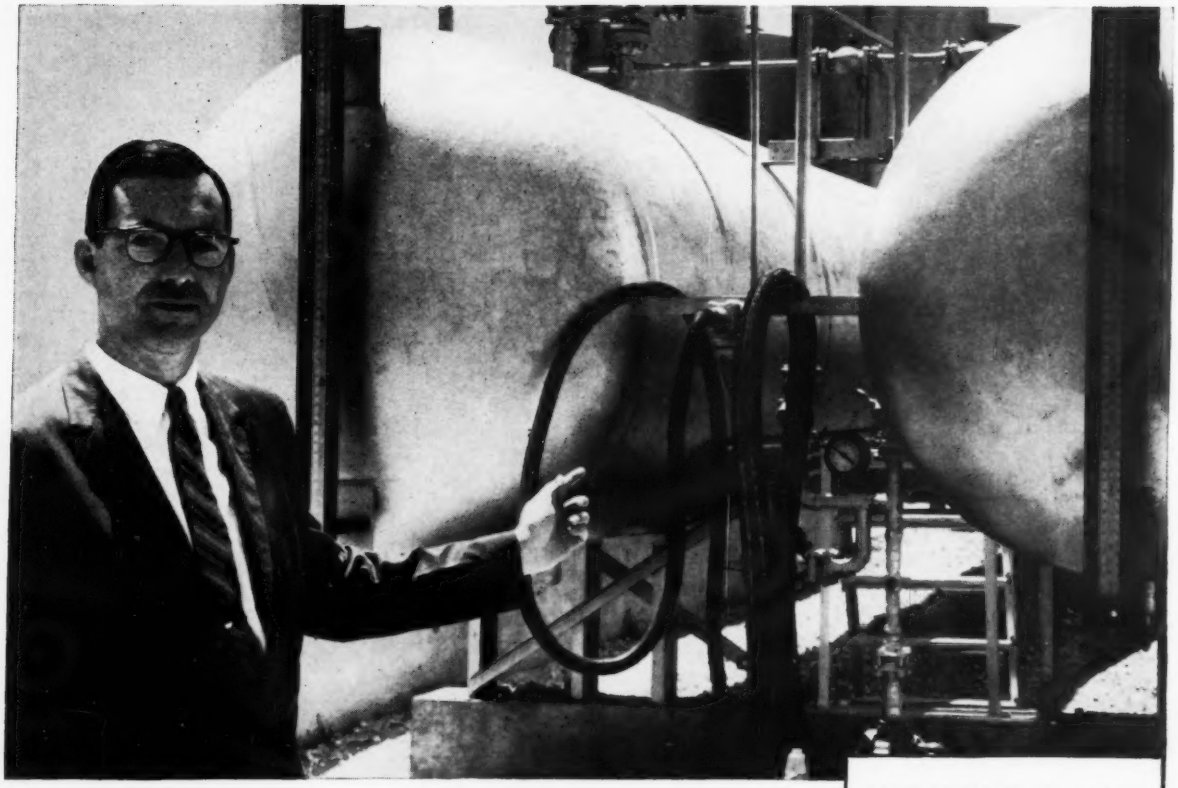
Olive Can Company, whose continuous growth has paced the expansion of the "specialty" container market, recently enlarged its operations by moving into an ultra-modern plant on Chicago's northwest side. These new facilities, which include a number of highly automated production lines, have enabled the firm to produce an increasingly wider variety of metal containers, both in size of container involved and quantity desired. This flexibility of production enables customers to keep their own metal container inventory at economically low levels, with every assurance that Olive can immediately schedule and produce additional metal containers within two or three days if they are urgently needed. Also, if a company is uncertain about the quantity of metal containers required to market a new product, it can place a small initial order, again with the assurance that Olive's unique production facilities can handle a sudden spurt without paying any type of "penalty".

Coupled with this unique ability to service any size order, the company's offer of a wide assortment of square, round, oval and oblong shape stock design tins has met with considerable success among both large and small buyers of "specialty" metal containers. Because these designs have proven successful and are economical to use, customers have happily forced Olive to devote an increasingly larger proportion of their production output to this type of business. Equally important, these stock designs not only give customers more "metal container packaging" for their money, but they can be produced in a minimum of time (when necessary, in less than forty eight hours).

In the field of custom design tins, a number of top national design and lithography awards have repeatedly been won by Olive Can Company's engineering, art and lithography experts. This creative service is available to all Olive customers and often results in a container that wins solid acceptance from the trade and immediate acceptance from the ultimate consumer.

For further information about plain and lithographed, custom or stock designed "specialty" metal containers contact—

OLIVE CAN COMPANY
4702 North Oketo Avenue • Chicago 31, Illinois



ROBERT WRIGHT, JR., was born in New Jersey and attended Lehigh University. After three years as a lieutenant in the U. S. Army Ordnance and Signal Corps during World War II, he returned to Lehigh, where he received his Bachelor of Science degree in industrial engineering in 1947. After graduation, Bob joined Du Pont as Chemical Supervisor in the Grasselli Chemicals Department. He held a variety of engineering and technical jobs for Du Pont until his sales assignment in "Freon" Products Division. As a salesman for "Freon" in Du Pont's Central District, Bob has put his broad knowledge of the chemical industry to work for custom loaders and aerosol marketers in his territory.

"My customers can call on Du Pont services to help their business grow"

says Robert Wright, Jr., of Du Pont

"If it concerns aerosols—no matter what the problem—my customers can call on any or all of Du Pont's comprehensive services to help them," says Bob Wright, sales representative for Du Pont's "Freon" Products Division. "Here's how many of these services were put to work for a customer in my territory who was expanding his activity in aerosols.

"To give him an economical and effective Freon* propellent storage and handling system, Du Pont engineers designed a bulk-storage layout tailored to his needs. The 'Freon' Products Laboratory helped him develop his products. A seminar, held for his management personnel, gave them information about aerosol marketing, manufacturing, laboratory techniques, quality control and safety procedures. In addition, training at Du Pont's laboratory helped make his operating personnel more efficient."

If you're a loader or marketer of aerosol products, you can take advantage of the sales-building services which Du Pont offers. In marketing, Du Pont surveys help you expand sales of your products. In national advertising and promotion, Du Pont works continuously to build markets for aerosols, bringing you a steady flow of new customers.

In addition, Du Pont's know-how and experience can help you with aerosol development or production problems. And in manufacture of "Freon", Du Pont offers aerosol propellents recognized throughout industry for their quality, performance and properties. Du Pont maintains the industry's fastest propellent delivery schedules from three plants and a country-wide network of warehouses.

If you have a problem in any area of aerosol development, production or marketing, call or write the Du Pont office nearest you. And be sure you buy "Freon" for all your propellent needs.

E. I. du Pont de Nemours & Co. (Inc.)
"Freon" Products Division 319
Wilmington 98, Delaware

BRANCH OFFICES
40 Worth Street
New York 13, N. Y.

7 S. Dearborn Street
Chicago 3, Illinois

701 Welch Road
Palo Alto, Calif.

FREON® propellents

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

**Freon and combinations of Freon- or F- with numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon propellents.*

B.P.D.

BOMBRINI PARODI-DELFINO

Licensee for manufacture in the U. S. A.
Aluminum International INC
GENERAL OFFICES: 1855 BLAKE STREET
DENVER 17, COLORADO
TERMINAL BOX 5108 MAIN 3-5131

Seamless impact extruded aluminum containers for the aerosol industry

No crimps, no solderings, no seams, no cements, NO LEAKERS!

Maximum resistance to pressure: distortion of the container's bottom occurs at over 250 p.s.i.

Minimum weight: a 12 oz can weighs 1.41 ozs, a 6 oz can weighs .89 ozs.

Full range of sizes to meet any requirement of the aerosol industry: wide choice of diameters, lengths and shapes.

Standard 1" opening to fit any normal cup-type aerosol valve.

Perfect decoration of the cans; base-lacquering in any color plus lithographic printing in up to four colors.

All containers may be internally coated with special lacquers if they are to be filled with corrosive products.

BOMBRINI PARODI-DELFINO - 267, VIA DEL CORSO - ROME, ITALY

publivision

the lady
never heard of
G. Barr & Company

. . . but we're contributing
to her daintiness and charm

The famous brand of spray cologne, hair spray, tooth paste, antiseptic, car polish, room deodorant, and scores of other aerosol products found in homes all over America were in many instances developed in our research laboratories and private label manufactured by us.

While our name *never* appears on a package, G. Barr & Company's aerosol packaging know-how is the *"hidden ingredient"* that is helping to sell tens of millions of America's leading aerosol products today. Have you heard the G. Barr & Company story? Ask for facts today!

G. BARR & COMPANY
Private Label Aerosols
3601 S. RACINE AVE. CHICAGO 9, ILL.

Packaging NOTES

New Vulcan Appointees

The appointment of Cothran C. Graves as southeastern regional sales manager of Vulcan

Cothran C. Graves

Steel Container Co., Birmingham, Ala., was announced recently by Gordon D. Zuck, president. At the same time Mr. Zuck announced that Fred L. Morris had joined the company as sales-service representative.

Mr. Graves has been associated with the steel pail and drum business for the past 17 years. He will make his headquarters in Birmingham and will handle Vulcan's full line of pails and drums. Production of these items has recently been expanded to include all sizes and styles of pails and drums from one-gallon through 65-gallons.

Fred L. Morris

Mr. Morris was with U.S. Steel Corp. before joining Vulcan, and earlier, during World War II, had served with the U.S. Navy for five years. He is a native of Alabama and a graduate of the University of Alabama.

★

New O-I Division

National Container Corp., New York, changed from a wholly owned subsidiary to an operating division of Owens-Illinois Glass Co., Toledo, O., as of July 26, 1958.

National is now known as Owens-Illinois Paper Products Division (formerly National Container Corp.). The new division announced that its operations and activities remain the same.

★

Wirz Tube Handbook

Uses and applications of different types of collapsible tubes are described and illustrated in a 32-page booklet published by A. H. Wirz, Inc., Fourth and Townsend Sts., Chester, Pa. The "Wirz Tube Handbook" gives detailed information on types of metal, tube sizes, openings, caps and decorations available and on the factors which should determine their choice. It also describes product testing and other services at the disposal of Wirz customers.

★

New Can Making Unit

Equipment that can produce more than 750 cans per minute, has been in operation for about a year, Continental Can Co., New York, revealed last month. This represents an increase of 50 per cent over previous can making rates, according to Gen. Lucius D. Clay, Continental board chairman, who made the announcement.

Usually can bodies are produced by wrapping individual steel "blanks" around a device which shapes the can cylinder. The opposite ends of the blanks are interlocked and then soldered.

The new "two-high" can line uses a technique of making can bodies in tandem and then separating them, along pre-scored lines, into individual units.

Equipment for the new operation was introduced in 1956, according to Gen. Clay. He explained that the firm delayed in announcing the new method until it was sure the operation was com-

Making cans at speeds of more than 750 per minute by new method developed by Continental Can Co., operator checks adjustment of unit which separates tandem can bodies, above, into individual units which roll down chutes at bottom.

OUR FLEXIBILITY PUTS US IN A BETTER POSITION

To Turn "INSIDE OUT" When It's Necessary to Take Care of Users

TRY—

CENTRAL Can Company

2415 W. 19th ST.
CHICAGO 8, ILLINOIS

mercially feasible. Continental is also reported to be exploring the possibility of producing can bodies by this method in multiples greater than two and at higher speeds.

★

Inland Container Prices Up

Inland Steel Container Co., division of Inland Steel Co., Chicago, announced last month its intention to raise its prices on steel drums and pails by approximately four per cent, effective Sept. 15th.

The move, according to a company spokesman, was necessitated by the increase in steel costs and substantial wage increases granted July 1st.

★

Crown Appoints Lohrfinck

W. L. "Bill" Lohrfinck has been appointed to the newly created position of sales manager within the crown and closure division sales of Crown Cork & Seal Co., Philadelphia, it has been announced by S. V. Tuttas, vice-president.

Mr. Lohrfinck joined Crown more than 13 years ago as a time clerk in the machinery division. After serving in various capacities, he was transferred to the sales organization. Most recently Mr. Lohrfinck was New York district sales manager.

★

Automatic Can Coder

The availability in the United States of the Bowers automatic can coder was announced in mid-August by J. M. Lehmann Co., Lyndhurst, N.J. The coder, designed in Canada, prints on either tops or bottoms of cans and features a special opaque, quick-drying ink that penetrates the palm oil in which cans are usually immersed, leaving a permanent code marking. The unit can print on containers in motion in any direction and without smearing, the manufacturer claims. This feature makes it possible to print on cans of slightly different height without making adjustments.

The coder fits on all types of can closing machines and has a capacity of 60 cans per minute. It handles containers of from 1/32nd to one gallon capacity. It prints up to three lines of 12 characters each and is available for either pneumatic or electric operation in any voltage.

Jess McBee, center, received the "Man of the Year" award of the California Packaging Club from Philip Lisbon, left, director of packaging for Max Factor & Co. and packaging instructor at the University of California, Los Angeles. Mr. McBee is a member of the sales staff of The Lord Baltimore Press and is president of the club. At right is Gail Voigt, Owens-Illinois Glass Co., who served on the club's selection committee. The award was presented for "outstanding leadership and service during 1958" in the packaging industry.

★

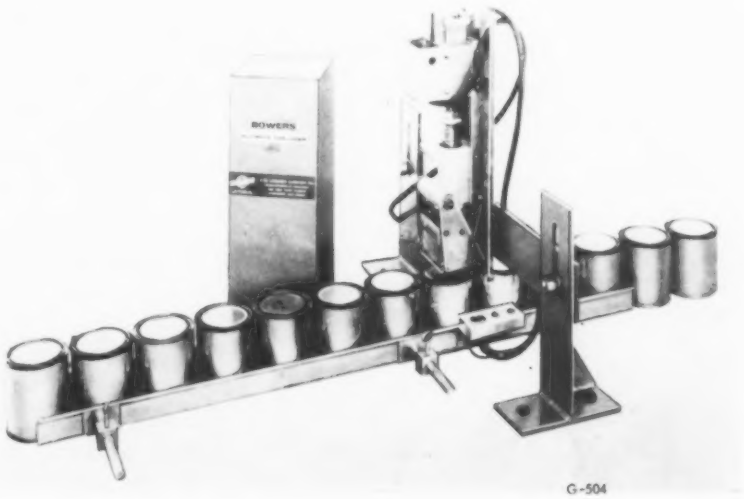
Plax Names Schillaci V.P.

Samuel F. Schillaci has been elected a vice president of Plax Corp., Hartford, Conn., by the board of directors, according to an announcement by Robert F. Elder, president.

Prior to this promotion, Mr. Schillaci held the dual post of assistant to the president and production manager.

He joined the firm in 1954 as production manager and was previously associated with Owens-Illinois Glass Co. for 25 years.

Bowers can coder now sold in U.S. by J. M. Lehmann Co., Lyndhurst, N. J.



G-504

Custom quality for your product

Note the smart, classic contours . . . the broad face for label impact and product recognition . . . the large size impression to emphasize your product's value. Add the facts that this new plastic bottle is lightweight, unbreakable, colorable and can be adapted to squeeze-spray or controlled dispensing.

Makes quite a package! And you can put it to work immediately and economically.

The NEW OBLONG is available from stock in natural polyethylene in 2- and 4-ounce sizes.

Plax stock line now comprises over 200 different container shapes and sizes. Includes Ovals, Tapered Ovals, Tapered Rounds, Boston Rounds, Cylinders, Oblongs and Square Modernes . . . as well as the remarkable new low-cost cylinders of rigid high-density polyethylene for household products.

PLAX **PLAX CORPORATION • P. O. BOX 1019 • HARTFORD, CONNECTICUT**

In Canada, Plax Canada Limited, Toronto, Montreal

Packaging Institute Forum Details

HIGHLIGHTS of the Packaging Institute's 20th annual national forum to be held at the Edgewater Beach Hotel, Chicago, Oct. 13, 14, and 15, were announced recently by N. W. Postweiler, Riegel Paper Corp., forum chairman. Pressure packaging will be featured prominently among 50 technical papers to be presented. The Corporate Award of the Packaging Institute and its Professional Award will be presented by Roger V. Wilson of Continental Can Co. at a special award dinner scheduled for Tuesday evening, Oct. 14. On display will be award winning packages in contests sponsored by the National Paper Box Manufacturers Association, the National Flexible Packaging Association, Folding Paper Box Association of America, and the Fiber Box Association.

Pressure packaging will be studied at a full day drug and pharmaceutical seminar on Tuesday, Oct. 14, with R. J. Hennessy of Lederle Laboratories Division as chairman. Subjects will include among others: "Packaging with Aerosols . . . in Your Plant . . . Through Your Contract Packager"; "Laboratory Development of Aerosols"; "Aerosol Cost Factors."

A package marketing seminar with Delbert Johnson, Continental Can Co., as moderator, is set for Monday afternoon, Oct. 13. Subjects will cover: "Adapting Packaging to the Ever Changing American Market Pattern"; "Coordinating Packaging with Art and Production"; "The Use of Motivational Research in Package Planning"; "Importance of Color"; "Predicting the Success of the Package"; and "The Role of the Package Designer in Your Packaging Program."

Other seminars scheduled for the three day meeting include: research and development, William T. Nye, Gaylord Container Corp., chairman; production line and machinery, A. R. Schaefer, New Jersey Machine Corp., chairman; printed folding box seminar, L. H. Cassert, Continental Paper Co., chairman; flexible packaging, Paul B. Reuman, E. I. du Pont de Nemours & Co., chairman; and a number of other subjects.

The forum will close with luncheon on Wednesday, Oct. 15, to permit registrants to attend the combined Packaging Institute-Society of Industrial Packaging Materials Handling Engineers special technical session at the Chicago Coliseum that afternoon and the SIPMHE exposition.

★

O-I Branch Office Moves

The New Orleans sales office of the glass container division of Owens-Illinois Glass Co., Toledo, O., recently was moved to 2475 Canal St. The office was previously located in the Pan American Building.

★

Breck Christmas Package

John H. Breck, Inc., Springfield, Mass., will feature prominently in its Christmas merchandise promotion for 1958 the "Breck" shampoo Christmas package. This item is a 16-ounce bottle of one of the three "Breck" shampoos – for dry, oily, or normal hair—wrapped in cellophane bearing Christmas greetings, decorated with gold stars, and tied with a gold ribbon.

★

Award to Plax Man

James Bailey, developer of the plastic bottle and consulting engineer for Plax Corp., Hartford, Conn., will receive an Edward Longstreth Medal from the Franklin Institute, Philadelphia, Oct. 15, for his contributions to the development of plastic bottles. Two other inventors will also receive medals.

The medal citation to Mr. Bailey reads::

"For the many advances in the art of processing plastics based on his personal technical contributions and his effective leadership in research and development and particularly of the development under his direction of methods for the successful commercial manufacture of unbreakable plastic bottles."

Mr. Bailey has been issued 45 patents in the fields of plastics and glass, and has written 21 articles on these subjects.

The Longstreth Medal, founded in 1890 by Edward Longstreth, is awarded annually by the Institute, Philadelphia's 134-year-old scientific-educational organization, for inventions of high order and for particularly meritorious improvements and developments in machines and mechanical processes.

★

Continental Appoints Two

Walter P. Murray has been named to the newly created position of executive representative of the eastern metal division of Continental Can Co., New York, it was announced last month by Orren R. McJunkins, vice-president for the division. With Continental for 34 years and the division's sales manager since April, 1946, Mr. Murray reports directly to Mr. McJunkins and concerns himself with executive contact in the industries served by the division. Succeeding Mr. Murray is Gorge F. Henschel who has had 28 years experience in the metal container industry with such firms as American Can Co. and National Can Co.

NEW FROM FULD!

NOW YOU CAN ENJOY THE PROFIT-PACKED BENEFITS OF PRESSURIZED-PACKAGED PRODUCTS—THANKS TO FULD BROTHERS' QUALITY-CONTROLLED

AEROSOL CUSTOM FILLING SERVICE!

SMALL LOT RUNS OUR SPECIALTY

Now, even if you are a *limited market* distributor, you can send your sales curve "straight up" with Fuld's aerosol custom packaging service. We handle oil and water bases, liquid and foam products of all types . . . insecticides, air fresheners, polishes, bug killers, spot cleaners, deodorants, bactericides, etc. for household, institutional, and industrial use.

Take advantage of our extensive facilities for product development, merchandising research, custom packaging and quality control.

COMPLETE SERVICE FACILITIES

• PRODUCT DEVELOPMENT

We will custom blend to your formula specifications or, package our own tested and proved products under your label—or, assist you in developing new products!

• MERCHANDISING RESEARCH

A recognized leader in aerosol packaged sanitation products, Fuld offers valuable merchandising assistance gained from its experience and continuing research.

• QUALITY CONTROL

Fuld guarantees rigid quality control on all production, regardless of the size of the run . . . the same consistent quality control that has been our policy for over 30 years.

• CUSTOM PACKAGING

A complete selection of smart new containers with built-in sales appeal. And *all*, with your private brand name prominently displayed! All service confidential.

Your choice of Simulated Lithography or Paper Labels

WRITE OR PHONE FOR FULL DETAILS

FULD

BROTHERS, INC.

702 S. Wolfe St., Balto. 31, Md. • West Coast Plant: Los Angeles 13, Calif.

Crown Modernizes Facilities

Crown Cork and Seal Co., Philadelphia, has reported that the work in the second phase of its $4 million modernization program planned over a period of three years is progressing ahead of schedule. Involved in the program is the moving of production lines at the Baltimore closure plant from old multi-story buildings to modern single story structures. Manufacturing, warehousing and shipping operations are being consolidated into a single story plant to reduce maintenance and material handling costs. The current phase of the program, which will cost $2.8 million, involves crown, screw cap, and Dacro milk bottle cap operations. More than 1,000,000 square feet of floor space are expected to be gained by the overall program, according to Karl W. Mueller, executive vice-president.

—★—

Packaging Symposium

A joint military and industry packaging and handling symposium will be held in Washington, D. C., Sept. 30 to Oct. 2, it was announced last month by the Office of Naval Material, Department of the Navy. The meeting is open to anyone interested in the subject and is free of charge. Some 20 titles are scheduled on the program including the following: "New Flexible Packaging Materials and Their Uses"; "Packaging Testing"; "Materials Handling Questions and Answers"; "New Trends in Packaging Materials and Machinery." Details pertaining to the symposium may be obtained from Chief of Naval Material (M721), Washington 25, D. C.

—★—

Draw For Exhibit Space

Representtaives of packaging machinery manufacturers will gather at the Commodore Hotel, New York, Oct. 21, to draw for exhibit space for the Packaging Machinery Manufacturers Institute Show of 1959, it was announced last month by W. B. Bronander, Jr., president of the institute. PMMI is the sponsor of the national trade show which will be held at the Coliseum in New York Nov. 17-20, 1959.

Mr. Bronander said the drawing is set for 9:30 a.m. in the hotel's west ballroom. It will be followed by a luncheon.

—★—

New Packaging Machine

A multiple packaging machine said to enable manufacturers to produce distributor and consumer packs in a wide variety of sizes of containers was introduced recently by the boxboard and folding carton division of Continental Can Co., New York.

Called "Jack-Et-Pak 50," the system offers mechanized wrap-around multipack construction in the manufacturing plant and is claimed to result in savings in labor. The unit is reported already successfully in use by hair spray, deodorant, and talcum powder manufacturers, according to William J. Hamilton, sales manager for multi-pack cartons.

Mr. Hamilton points out that the system is a special aid to the manufacturer of diversified lines because of the quick change that can be made from one size or style to another. Successful operation and efficient changeover is possible from cans to glass or aerosols to squeeze bottles.

Compact, "Jak-Et-Pak 50" is 10 feet four inches long, including a four foot infeed container, and four feet two inches in width. The unit handles up to 50 multipacks per minute.

—★—

Crown Appoints McClure

Edward J. McClure has been appointed acting director of purchasing for Crown Cork & Seal Co., Philadelphia, it has been announced by Karl W. Mueller, executive vice-president. Mr. McClure, formerly manager of special product sales, succeeds E. B. Webster who becomes credit manager.

Mr. McClure joined the firm in 1938 and has held several sales executive positions.

New Plax Container

A natural polyethylene container called "New Oblong" is available in two- and four-ounce sizes from Plax Corp., Hartford, Conn., it was announced recently.

The light weight, unbreakable, and colorable container is said to be adaptable to squeeze-spray or controlled dispensing.

—★—

Non-Skid Carton

A new type corrugated container said to resist skidding has been introduced by the packaging division of Olin Mathieson Chemical Corp., New York.

Called "Skid-Master," the containers are designed to decrease product damage caused by container skidding and slippage on production lines, in transit, in handling, and in warehouse operations. They also reduce danger of injury to personnel.

The new container's non-skid properties are built into the linerboard at the papermill and not applied by conventional methods after fabricating.

—★—

New Gottscho Brochure

An illustrated four-page brochure describing its line for imprinting, coding and marking packages and products has been issued by Adolph Gottscho, Inc., Hillside 5, N. J. The folder is available from the firm upon request.

—★—

Bulk Shipping Container

Corrugated bulk shipping containers that hold up to one ton, of dry, free flowing material, are described in a folder issued by Ohio Boxboard Co., Rittman, O. Called "Pillar-Pac" the non-returnable containers can be stacked two high to save shipping and storing space. Their self-palletized construction facilitates handling by fork lift trucks.

The containers have a body bursting strength of 500 pounds per square inch and are constructed of double wall corrugated board.

Aerosol Awards . . .

The seventh annual AEROSOL AWARDS will be made
in conjunction with the 45th Annual Meeting of the

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION

COMMODORE HOTEL, NEW YORK
DECEMBER 8-10, 1958

. . . will include judging and selecting of best aerosol packages of the year

The aerosol package competition and awards
will be divided into eleven classes as follows:

1. Insecticides, repellents, moth proofers.
2. Room deodorants.
3. Lacquers, enamels, other protective coatings; paint remover.
4. Other household products — polishes, glass cleaner, rug shampoo, water repellent, snow, etc.
5. Shave products.
6. Hair preparations.
7. Other personal products—shampoo, body deodorants, dentifrices, sun tan oil, etc.
8. Medicinal and pharmaceutical products.
9. Industrial products — lubricants, belt dressings, stencil inks, etc.
10. Perfumes, colognes, toilet waters.
11. Food products.

. . . a top award for "best in the show" will also be made

Rules of the contest:

1. All entries must be made in the name of the brand owner or marketer. All products entered must have been freely offered for sale on the open market.

2. Entries will close October 15, 1958. All entries should be sent as soon after Sept. 15 as possible to the Committee at the CSMA office, and should comprise one completely assembled empty container with attached tag showing (a) name and address of brand owner, (b) class in which entry is made.

3. Only one entry may be made by any marketer or brand owner in any one class, but entries may be made in as many classes as desired.

4. Products entered must be properly labeled in accordance with safety requirements and all laws and regulations pertinent to particular products.

5. Entries are open to any aerosol brand owner or marketer anywhere, and are not restricted to members of CSMA. There are no entry fees or other charges to entrants.

6. Best packages will be selected in eleven classes and a "best package in the show" will be named. Judging will be done by a group of qualified experts. Their decisions will be final.

For information and entry blanks, write to
AEROSOL AWARDS COMMITTEE
Chemical Specialties Manufacturers Association
50 East 41st St., New York 17, N. Y.

MAKE PLANS FOR YOUR ENTRIES NOW!

Aerosol Product Ideas for You!

Are you interested in aerosol pharmaceuticals, cosmetics and toiletries? Cosmetics are the leading sales producers right now and pharmaceuticals will probably make the next big break-through in aerosol marketing. Or are you interested in aerosol household products, whose sales continue to boom?

If so, you'll want the helpful *Product Information Bulletins* prepared by our "Genetron" Aerosol Technical Service Laboratory on many new as well as established products.

They're free. They contain such basic information as: typical aerosol formulations . . . application methods . . . advantages offered by the proposed aerosol product . . . packaging suggestions . . . data on stability, flammability, pressures, etc. . . . competitive products.

The bulletins presently available are listed for your convenience in the coupon at right. Others are continually being prepared, and we will be glad to send them to you if you would like to be put on our mailing list.

One of these product suggestions may be just what you've been looking for to help you tap the dynamic aerosol market! So check the coupon for the bulletins you want and mail it *now!*

genetron®
AEROSOL PROPELLANTS
Putting the "push" in America's finest aerosols

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

"Genetron" Department
GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL CORPORATION
40 Rector Street, New York 6, N. Y.

Please send copy of Product Information Bulletins checked.

- ☐ Athlete's Foot Medication
- ☐ Burn Remedy
- ☐ External Analgesics
- ☐ External Personal Deodorants
- ☐ Hair Dressing for Men
- ☐ Hair Shampoo
- ☐ Hand Lotions, Creams
- ☐ Ice Tray Desticker
- ☐ Nasal Relief Spray
- ☐ Neomycin Foam
- ☐ Neomycin Spray
- ☐ New Hair Spray
- ☐ Poison Ivy, Oak and Sumac Remedy
- ☐ Run Stopper
- ☐ Sarceptic Mange Spray
- ☐ Spray-on Protective Film
- ☐ Suntan Lotions
- ☐ Wall Cleaner
- ☐ White Shoe Polish
- ☐ Household Aerosol Products (includes such popular products as room deodorants, oven cleaner, glass cleaner, disinfectant, mildew proofer, wax polish, water repellent, etc.)

☐ Please add my name to your Product Bulletin mailing list.

SCS-98

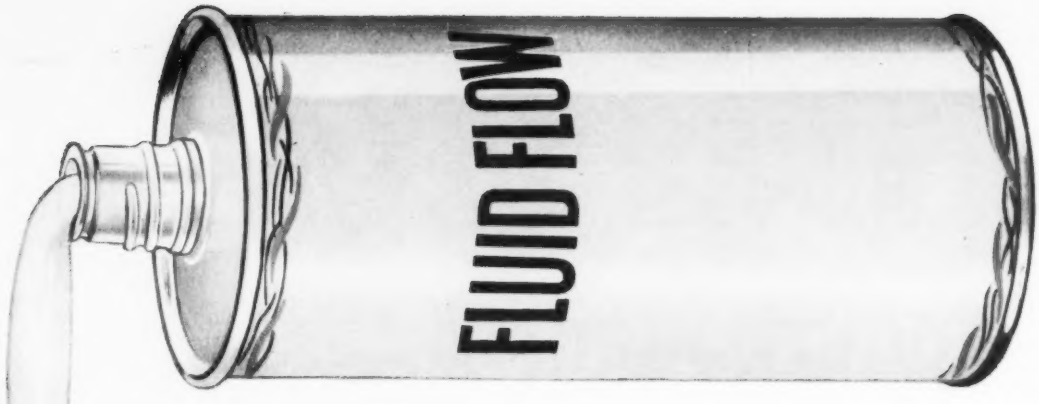
Name_____

Title_____

Company_____

Address_____

City_____ Zone____ State_____



FLUID FLOW CANS BY CONTINENTAL

BEST FOR *Polishes and Waxes*

Your waxes and polishes take on many new selling advantages when you send them to market in Continental Fluid Flow cans. Consider these features:

No drip nozzle of polyethylene for free flow and exact dripless cutoff.

Wrap around lithography: Solderless construction leaves the entire can (dome top, too) free for decoration with Continental's superb lithography.

Matchless beauty that lasts: Protected by a special varnish that prevents marring during display.

Unsurpassed product protection insured by specially developed enamel linings.

Colored nozzles to match or contrast with can design for added sales appeal.

WIDEST RANGE OF SIZES!

Continental Fluid Flow cans are available in the widest range of sizes, every size you want to satisfy your customer's needs, from 12 oz. to one-half gallon. Get the best can for your polishes and waxes, *plus* Continental research and engineering service. Call Continental today.

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CONTINENTAL CAN COMPANY

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4
Canadian Division: 5595 Pare St., Montreal, Que.

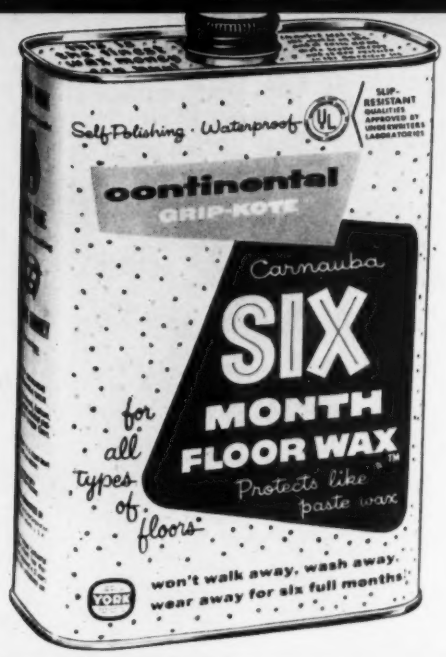
What's New?

Latest entry in the general purpose, household, liquid cleaning compound derby, a la "Lestoil", is "Handy Andy", now being marketed in Chicago, Baltimore, Washington and Richmond by Lever Brothers Co., New York. A clear amber liquid, probably combining a detergent and solvent, product comes packaged in pint and quart sizes to retail at 39 and 69 cents, respectively. Novel shaped bottle, with scalloped section of non-slip roughened glass near top, is by Owens-Illinois Glass Co., Toledo. O-I also supplies white cap. Three-color label (red, yellow, blue) is predominantly red, with product name in yellow.

Two new aerosol products and two handy-pack shoe cleaning bags have recently been added to the "Griffin" line of shoe products made and marketed by the Boyle-Midway Division of American Home Products Corp., New York. New push-button suede cleaner for every color except white can be used to restore not only suede shoes but handbags, gloves, belts, and other suede accessories. Retail price of 69 cents for six ounce can is same as for push-button "Allwite" foam, which is designed for cleaning white shoes. Products are filled at the Boyle-Midway plant in Cranford, N. J., and are packaged in American cans fitted with Clayton valves and caps. Rounding out the "Griffin" line are the "Allwite" bag and "Buck" bag for white buck, suede, nubuck and canvas shoes, and for shag, desert or dirty buck shoes, respectively. Bags are 29 cent retailers.

$1.45 PINT
Ship Ahoy
Ship Ahoy
AQUATEX
ALUMINUM POLISH
SPEC. MIL-P-6888
TYPE I, LIQUID
Recommended for use as a hand polish for aluminum surfaces. Its abrasive quality enables it to remove tarnish and to produce a high, lasting finish on unpainted, aluminum-clad surfaces.
16 oz.
153-16
SHAKE WELL

Recently introduced "Aquatex" aluminum polish of Dakoline Chemical Co., Brooklyn, is designed to remove tarnish and to restore the finish to unpainted aluminum-clad surfaces. Product is said to contain a mild abrasive and a small percentage of wax to leave a film on polished surfaces. In pint cans by Eastern Can Co. and Bushwick Can Co., both Brooklyn, the product retails for $1.45.



Silicone-based "Fab-Cote," to render the kinds of fabrics water and stain repellent, is now available in a 16-ounce pressure package, it was announced recently by Collingwood Laboratories, Toledo, O. Marketed primarily for use by upholsterers and cleaners for application on furniture fabrics, the product can also be used to renew the repellency of raincoats. It may also be applied to neckties and vests to make them stainproof and on convertible automobile tops to prevent unsightly water stains, the manufacturer claims. Pressure package retails for $1.98. The material is also available in one gallon cans and five gallon drums.

* * * * *

New "Six Month" floor wax of Continental Wax Corp., Mount Vernon, N.Y., is now being introduced in the metropolitan New York-New Jersey area, following its debut in Florida, Ohio and Texas. Product promotion features use of carnauba wax, as opposed to newer synthetics and polymers. Stackable quarts retail at $1.49; half gallons are $2.69 and gallons are $4.79.

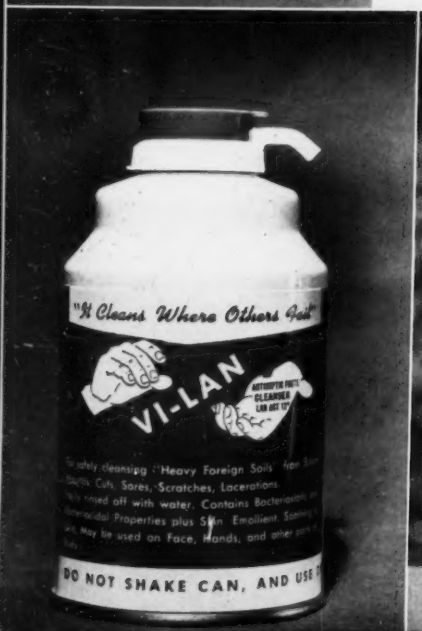
* * * * *

Another new all-puurpose liquid household cleaner was introduced recently by Fels & Co., Philadelphia. Packaged in one pint glass bottles supplied by Anchor Hocking Glass Corp., Lancaster, O., the cleaner is a clear, amber liquid that is pleasantly perfumed. Two color (red and green) paper label features traditional Fels' fishtail design in red with name in reverse. Cap is white.

* * * * *

Two newly introduced pressure packaged glass cleaners now on the European retail market feature actuators and valves supplied by Risdon Manufacturing Co., Naugatuck, Conn. A Danish product, "Piff" (left) is marketed by A/S Reckitt & Coleman, Copenhagen, and is fitted with a Risdon "Micro-Mist" actuator and valve. Six and 12-ounce containers are by A/S Glud & Marstrands Fabriker, and A/S Nives of Copenhagen is the filler. The other glass cleaner, "Spray Vetril", reportedly Italy's first water-based aerosol product, is made by Brill of Milan. The one piece aluminum container also utilizes the "Micro-Mist" valve and actuator made by Solfrene S. r. l. of Milan, under license from Risdon.

* * * * *



The addition of a pressure packaged waterless hand cleaner to its line of hand cleaners was announced recently by Dameron Enterprises, Inc., Louisville, Ky. Designed "Vi-Lan", the antiseptic hand cleaner is packed in a Crown "Spray-tainer" fitted with a Precision valve and cap. Containing lanolin and "Actamer" as a germicidal agent, the product is designed for removing all types of soil from the skin. Twelve cans are packaged to the case.

* * * * *

Cheristmas packages of "Woodbury" bubbling bath oil, just announced by Andrew Jergens Co., Cincinnati, feature 16-ounce bottles by Owens-Illinois Glass Co., Toledo. The bath oil, available in two fragrances: apple blossom and fragrant pine, is packaged in bottles appropriately decorated with bubbles in white and aqua. Plastic closures are also supplied by O-I.

The complete package line of household chemical specialties made by Savogran Co., Boston, was recently redesigned to modernize, brighten and strengthen "family resemblance." Colors employed for the newly designed packages include orange, blue and white. "Family resemblance," achieved by similar type faces for product names at tops of packages, inverted triangles, crossed by "Savogran" name, also makes it possible for retailers to display related items. New package design is also being adapted to dealer in-store promotion material, dealer signs and company letterheads.

Most novel polyethylene packaging seen yet is pale green hand for "Linc-o-Lin" hand cream of Lincoln Hair Products, Ltd., London, England. Plastic "squeeze bottle" type package dispenses hand cream for chapped and "work worn" hands. Black plastic cap is of rigid plastic.

Product furnished by Andrew H. Wolff Pegasus International, Corp., New York

Special Christmas holiday package is being used by Quality Products Co., Brooklyn, to promote its "Monique" hand cream. Collapsible metal tube, decorated in pink and blue, is supplied by A. H. Wirz, Inc., Chester, Pa. Triangular shaped folding carton is decorated in the same colors. Product is designed as a gift to beauty shop customers.

THE FUTURE
IN PACKAGING

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HOUSEHOLD PRODUCTS

TOPICAL APPLICATION PRODUCTS

CREAM AND LIQUID PRODUCTS

PERSONAL PRODUCTS

FOOD PRODUCTS

The package of the future, for any product that flows, is an aerosol container. The valve for aerosols, naturally, is made by Precision, pioneers, researchers and developers of the package of the future. Whether your product should be dispensed in a spray, a foam, a stream or a drop, Precision engineers will be pleased to furnish the information and the cooperation you require. There is no obligation, of course.

PRECISION

Precision Valve Corporation

700 NEPPERHAN AVENUE, YONKERS, N. Y. • ZURICH

NEW Trade Marks

THe following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

Dobie — This for scouring, polishing, and cleaning pads. Filed Dec. 11, 1957 by Dow Chemical Co., Midland, Mich. Claims use since Nov. 7, 1957.

A-T-A—This for weed killer. Filed Oct. 23, 1957 by American Cyanamid Co., New York. Claims use since Sept. 14, 1957.

Fanfare—This for room deodorant spray. Filed Jan. 13, 1958 by Industrial Soap Co., St. Louis. Claims use since Dec. 14, 1957.

Lavish — This for cosmetic facial and body cream. Filed Apr. 24, 1957 by Chesebrough Pond's, Inc., New York. Claims use since Mar. 13, 1957.

Tip 'N Twinkle—This for liquid gem cleaner. Filed Dec. 10, 1957 by Tip 'N Twinkle, Inc., Roanoke, Va. Claims use since Nov. 12, 1954.

Expray—This for metal cleaners for spray washer applications. Filed Jan. 23, 1958 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Nov. 16, 1955.

Mersoclean 540—This for solvent type metal cleaner. Filed Jan. 23, 1958 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Mar. 23, 1956.

Grand—This for liquid detergent. Filed Jan 27, 1958 by Grand Union Co., East Paterson, N. J. Claims use since on or about Sept. 26, 1957.

The Wybrant System—This for shampoo for the treatment of all types of human hair including coarse, fine, oily, or dry. Filed Feb. 4, 1958 by Wybrant System Products Corp., New York. Claims use since September, 1957.

Wool Queen—This for cold water soap. Filed Mar. 3, 1958 by Universal Products Corp., St. Louis. Claims use since Jan. 2, 1957.

Hi-Point—This for liquid cleaning compound for glass, metal, wood surfaces, tile, porcelain, etc. Filed Apr. 21, 1958 by Hi-point Co., Detroit, Mich. Claims use since Apr. 17, 1958.

Pledge — This for furniture polish and cleaner. Filed Feb. 10, 1958 by S. C. Johnson & Son, Inc. Racine, Wisc. Claims use since Jan. 2, 1958.

Kwik Rid—This for insecticides, crab grass killer, rose pest killer and fungicide. Filed Sept. 5, 1957 by Plough, Inc., Memphis, Tenn. Claims use since Feb 8, 1956.

Frean—This for general purpose disinfectant. Filed Nov. 18, 1957 by Peck's Products Co., St. Louis. Claims use since March, 1957.

Mac's Super Gloss—This for car washing preparation and automobile finish cleaner. Filed June 28, 1956 by Mac's Super Gloss Co., doing business as Mac's Super Gloss Company, Los Angeles. Claims use since 1931.

Handy Andy—This for liquid detergent for general household cleaning and for laundry. Filed May 15, 1958 by Lever Brothers Co., New York. Claims use since May 12, 1958.

Poly-On—This for waxless floor polish. Filed Sept. 23, 1957 by Arrow Chemical Chemical Products, Inc., Detroit. Claims use since on or about July 31, 1957.

3-D—This for auto polish. Filed Oct. 22, 1957 by Associated Engineering Chemistry, Inc., Fort Lauderdale, Fla. Claims use since Sept. 3, 1957.

Dan-Dee—This for cleaner and polish for glass, metal, and porcelain. Filed June 17, 1958 by Twin City Shellac Co., Brooklyn, N.Y. Claims use since May 21, 1948.

Orkin-Aire—This for insecticides. Filed May 15, 1957 by Orkin Exterminating Co., Atlanta, Ga. Claims use since Feb. 28, 1957.

Fire-Cracker—This for insecticides and agricultural fungicides. Filed Aug. 30, 1957 by Hayes-Sammons Chemical Co., Mission, Tex. Claims use since Aug. 5, 1957.

Spicymist — This for room or household spray deodorant. Filed Dec. 12, 1957 by Acme Chemical Co., Milwaukee. Claims use since Oct. 16, 1957.

I-Septic — This for antiseptic wetting and cleaning fluid for plastic contact lenses. Filed Nov. 7, 1957 by James H. Conover, doing business as Mi Con Laboratories, Wauconda, Ill. Claims use since Jan. 5, 1952.

Mi-Con—This for antiseptic, wetting and cleansing solution for plastic contact lenses. Filed Nov. 21, 1957 by James H. Conover, doing business as Mi Con Laboratories, Wauconda, Ill. Claims use since Jan. 25, 1957.

Mikro Stat—This for neutral detergent. Filed Dec. 12, 1957 by Bonewitz Chemicals, Inc., Burlington, Ia. Claims use since Apr. 8, 1955.

Diamon-Glow—This for jewelry cleaning fluid. Filed Jan. 15, 1958 by Roy Kenneth Monson, doing business as The Diamon Products Co., Denver. Claims use since Sept. 28, 1956.

Angel Mist—This for shampoo for the hair. Filed Jan. 24, 1958 by Chesbrough Pond's Inc., New York. Claims use since Jan. 20, 1956.

Bravo — This for all-purpose cleaner with sanitizing, deodorizing, and germicidal characteristics. Filed Feb. 10, 1958 by S. C. Johnson & Son, Inc., Racine, Wis. Claims use since Dec. 4, 1957.

Dun-Ewik—This for wall cleaner and cleaner-impregnated disposable pad. Filed Feb. 26, 1958 by Horace M. Dunlap, doing business as The Dunlap Co., Wenatchee, Wis. Claims use since Apr. 2, 1945.

Trix — This for household detergent and cleaner. Filed May 16, 1958 by Curley Co., Philadelphia. Claims use since Apr. 15, 1958.

Peek—This for household detergent and cleaner. Filed May 16, 1958 by Curley Co., Philadelphia. Claims use since Mar. 6, 1958.

★

Economics Boosts Net

Sales of Economics Laboratory, Inc., St. Paul, Minn., for the fiscal year ended June 30th were reported recently at $19,132,113, compared with $17,696,532 for the same period last year. Net earnings for the firm were $655,624 or $1.53 per common share in 1958 against $650,262, or $1.51 a share in 1957.

Disinfectant Testing

(*From Page* 99)

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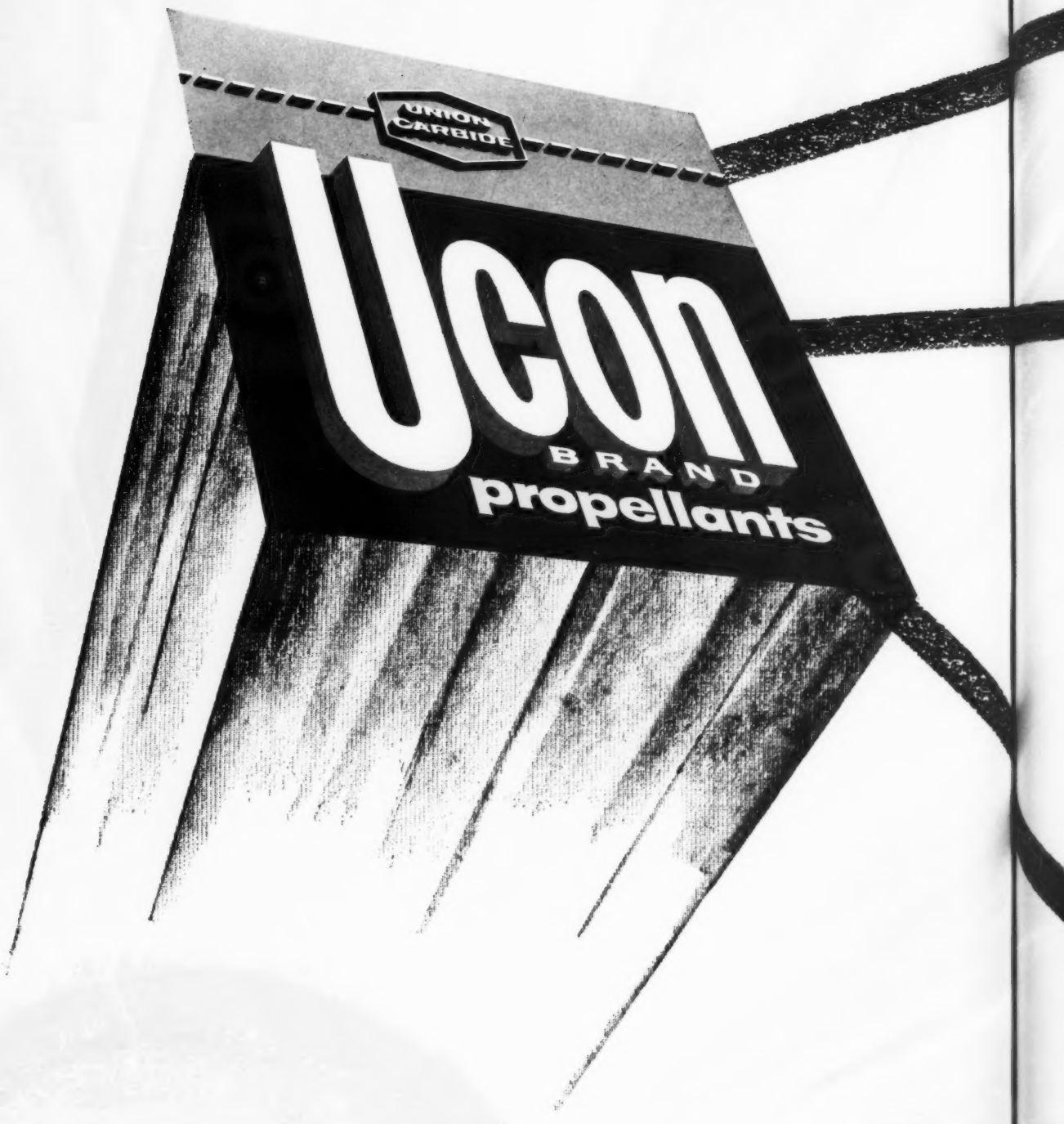
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Technical Service to help fillers and marketers develop new aerosol product applications, improve present ones. Years of experience in the development and application of emulsions, surface coatings and solvents back up the high quality of the assistance which will be available to you.

Prompt Delivery from a nation-wide network of distribution points... the quantity you want, when you want it.

There will be a right UCON Propellant for practically every aerosol purpose. For more about these products of America's newest plant designed exclusively to produce highest quality fluorocarbons, write UCON Propellants, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 30 East 42nd St., New York 17, N. Y.

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UCON Propellants will be available in five grades

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UCON Propellant 22 Monochlorodifluoromethane
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PRESSURE PACKAGING

Aerosol Supermarket Anniversary Feature

AS part of the tenth anniversary celebration of its formation as a division, the Aerosol Division of the Chemical Specialties Manufacturers Association plans to stage an "aerosol supermarket" in connection with the 45th annual meeting of CSMA at the Hotel Commodore, New York, December 8-10. The West Ballroom of the Commodore will be arranged with eleven booths resembling a supermarket with displays of present-day aerosols, one booth for each classification of products in the annual aerosol packaging contest. These groups are as follows: insecticides, insect repellents and moth products; room deodorants; paints, enamels and other protective coatings and paint remover; other household products such as polishes, glass cleaner and rug shampoo; shave products; hair preparations; perfumes, colognes and toilet waters; other personal products such as body deodorants, shampoos, dentifrices, suntan oil, etc.; medicinal and pharmaceutical products; industrial products such as lubricants, stencil inks, belt dressings, etc.; food products.

The plan calls for inviting editors of some 50 women's and trade magazines to visit the supermarket, each to be supplied with the usual supermarket wire pushcart and to go from booth to booth to collect samples of various aerosol products. Manufacturers in the pressure packaging field will be asked to donate samples of their products for distribution to the editors. Booths are to be manned by representatives of aerosol manufacturers. A cocktail bar will also be set up in the exhibit room. Entries in the annual aerosol packaging contest will also be on display in the supermarket room or in an adjacent room. Following the show for the editors, the supermarket will be opened for general CSMA convention attendance.

At a meeting of the Aerosol Publicity Committee which is in charge of the "aerosol supermarket" held at the Chemists Club, New York, last month, it was proposed that a fashion show be held as the medium for the tenth anniversary aerosol celebration. Discussion brought out that such a show with professional models and necessary equipment would cost a minimum of five thousand dollars. The proposal of the supermarket idea was then made by Joseph Tomlinson of General Chemical Division of Allied Chemical and adopted by the committee.

Fred Lodes of Lodes Aerosol Consultants, Inc., chairman of the Aerosol Publicity Committee, which is also conducting the seventh annual Aerosol Packaging Contest to be staged in connection with the CSMA 45th annual meeting, reminded the committee that the aerosol packaging contest would probably be larger than ever this year and that entries must be received at the CSMA office by October 15th. Several judges have been tentatively selected. The full panel of judges will be announced about October 15. Judging will be held about the middle of November. Entries are not confined to members of CSMA but are open without charge to marketers of pressure packed products anywhere.

—★—

Speaker on Aerosol Costs

Sam Prussin, director of new products and sales development of Aerosol Techniques, Inc., Bridgeport, Conn., will present a paper entitled "Cost Substantiation of Aerosol Packaging" on the drug and pharmaceutical program of the 20th annual forum of the Packaging Institute on Oct. 14, Chicago.

Three new pressure packaged cosmetic aids: a suntan lotion, a quick drying nail spray, and an egg shampoo, were introduced on the European market recently. "Ambra Solare" suntan lotion, produced by L'Oreal, Turin, Italy, comes in a one piece aluminum container. A unique hook on plastic protective cap makes it easy to attach can to bathing suit or belt. Solfrene S. r. l., Milan, Italian licensee for Risdon Manufacturing Co., Naugatuck, Conn., manufactured the "Micro-Mist" valve and actuator, as well as filling the lotion. Yvonne D'Estree's "Crystal Nail Dry" made by A. H. Riise of Copenhagen, Denmark, is first nail dryer to be marketed in that country. Valve is a Risdon "Micro-Mist" made by Solfrene, and container is by Krieg & Zivy, Paris. "Nox" egg shampoo, also by Riise, comes in metal can by Glud & Marstrand, Copenhagen. Valve and actuator by Risdon. A/S Nivea, Copenhagen is the filler.

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Sun Tube Quits Aerosol Valve Business

PRECISION Valve Corp., Yonkers, N. Y., has acquired all of the aerosol valve making equipment and inventory of valves of Sun Tube Corp., Hillside, N. J. a subsidiary of American Can Co., New York, it was revealed recently by Robert H. Abplanalp, vice-president of Precision.

Rumors that Sun was planning to discontinue making valves for pressure packaging were confirmed on Aug. 14 with an announcement by Sun that it would stop making and selling valves. According to the announcement, made by Joseph D. Martin, the decision to withdraw from the aerosol valve field was "taken after a study of the firm's present position in the valve industry and the future potential of business available to it."

Sun was sued this spring by Precision for alleged infringement of Precision's basic valve patent, No. 2,631,814, issued on March 17, 1953 to Mr. Abplanalp and John Baessler, president of Precision. The suit never came to trial, having been settled out of court.

Precision Valve Corp., the largest supplier of aerosol valves in the U.S., was incorporated in 1949, when it began producing aerosol valves on a commercial scale. Earlier, Messrs. Baessler and Abplanalp made a study of aerosol valves and decided the problem of faulty valves could be licked. Mr. Baessler was the owner of a small firm that installed coin machines on automatic washers and Mr. Abplanalp operated a machine shop in the Bronx. With this background the men combined their talents and thus formed the first firm in the field to specialize in aerosol valves.

Mr. Martin's election as president of Sun to succeed Kenneth M. Yeghorn was announced in July. The new Sun president had been executive vice-president of the firm since 1955. Mr. Leghorn was named president of Bradley Container Corp., Maynard, Mass., an American Can subsidiary engaged in the manufacture of plastic tubes, bottles and "cans."

In announcing Sun's decision, Mr. Martin also said the change would not affect the firm's principal product lines of collapsible metal tubes and rigid-wall impact extrusions.

"We plan to devote our full efforts to expanding markets for our major product lines and to an accelerated program of new product development for the many industries we serve," he said.

Sun Tube was formed originally in 1924 by two individuals, Frank Lynah and Henry Bristol as an independent company for the manufacture of collapsible tubes. It was a major supplier of Bristol-Myers Co. and in 1945 became a wholly owned subsidiary of Bristol-Myers, whose plant was directly adjacent to Sun's. On Dec. 21, 1956 American Can Co. announced that it had purchased Sun Tube, at about the time Sun was beginning its development work on aerosol valves. In 1957 Sun announced its commercial entry into the aerosol valve field.

C. L. Alexander continues as general sales manager of Sun.

—★—

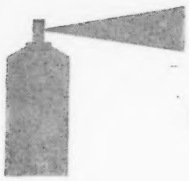
Du Pont Reassigns Salesmen

Reassignment of technical sales personnel serving customers of the firm's "Freon" aerosol propellants has been announced by E. I. du Pont de Nemours & Co., Wilmington, Del.

Aubrey E. Fulford has been transferred from the Jacksonville, Fla., territory to the Kansas City territory. Mr. Brooks Jackson has moved from the Roanoke Va., territory to Jacksonville, and John K. Worthington has transferred from Kansas City to the Syracuse, N. Y., territory. William W. Massengill has taken over the Roanoke territory. All of these reassignments became effective Sept. 1st.

Other changes scheduled to go into effect Oct. 1st include the appointment of Lawrence P. Hall, Jr., as technical sales representative in the St. Louis territory. Robert Wright, Jr., will move from St. Louis to the Chicago territory replacing Glenn A. Piper, Jr., who becomes technical assistant to the aerosol sales manager in the Wilmington office of the "Freon" products division.

EYEING TOMORROW . . . A delegation of Du Pont aerosol experts from Wilmington, Del., visits the laboratories of Aerosol Techniques, Inc., in Bridgeport, Conn., to join ATI chemists in a discussion of technical problems and new developments. Seated is Fred Presant, ATI director of research and development. Standing, left to right: front row, H. R. Shepherd, president of ATI; Charles Wirth III, Dr. Fred Read, Dr. Paul Sanders, Dr. Don Kvalnes and A. H. Lawrence Jr., all of Du Pont;; back row, C. Earle Kimble, Du Pont, ATI's James Russo; Du Pont's Dr. Frank Bower, Sam Prussin and Fred Gardner, ATI, and L. P. Hall, Jr. Du Pont.



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There's strong feminine appeal in cosmetics packaged the no-fuss, no-muss aerosol way. Products that have gained new success through aerosol packaging with ISOTRON propellents include colognes, perfumes, hair sprays, hand lotions, deodorants, shampoos, soaps, depilatories, suntan lotions and fingernail polish dryers.

Personalized technical assistance from Pennsalt can simplify aerosol development of your cosmetic line. Our laboratory can determine the correct pressure and spray pattern, test for stability and other important characteristics, and check performance with a trial loading. Our *complete* line of ISOTRONS enables you to get the exact propellent for your formula. And ISOTRONS are nonirritating, noncorrosive, stable even in alcoholic solution.

To get started on your new aerosol, call or write Pennsalt today. And for expert production, contact one of these leading contract fillers.

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ISOTRON Department 638

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Bridgeport, Conn.
Allied Professional Associates Ltd.
Buffalo, N. Y.
A-M-R Chemical Co. Inc.
Brooklyn, N. Y.
Armstrong Laboratories
Boston, Mass.
Associated Brands Inc.
Brooklyn, N. Y.
G. Barr & Co.
Chicago; N. Y.; Los Angeles
Capitol Packaging Co.
Forest Park, Ill.
Claire Mfg. Co.
Ft. Lauderdale, Fla.
Connecticut Chemical Research Corp.
Bridgeport, Conn.
Continental Filling Corporation
Danville, Ill.
Fluid Chemical Co.
Newark, N. J.
Gard Industries Inc.
Northfield, Ill.
Jet-Aer Inc.
Paterson, N. J.
La Maur, Inc.
Minneapolis, Minn.
National Spray Can Filling Corp.
Brooklyn, N. Y.
Old Empire, Inc.
Newark, N. J.
Peterson Filling & Packaging Co.
Danville, Ill.
Powr-Pak Inc.
Bridgeport, Conn.
Pressure Products Co.
West Chester, Pa.
Puritan Distributors Co.
Boston, Mass.
Regal Chemical Corp.
Brooklyn, N. Y.
Eugene Rose Company
Chicago, Ill.
Southeast Packaging Co.
St. Petersburg, Fla.
John C. Stalfort & Sons
Baltimore, Maryland
Strobel Products Co.
Louisville, Ky.
Sun-Lac Inc.
Newark, N. J.
Texas Aerosols, Inc.
Houston, Texas
Thomassen of Pa., Inc.
Norristown, Pa.
Wellsten Aerosol Mfg. Co.
Wellston, Ohio
Western Filling Corp.
Los Angeles, Calif.

Aerosol Techniques Completes Expansion

COMPLETION of an expansion program and relocation of its executive headquarters and research and development laboratories was announced last month by H. R. Shepherd, president of Aerosol Techniques, Inc., Bridgeport, Conn. The firm specializes in contract packaging of all types of aerosol and pressure packages.

The new offices and laboratories are now located at 1730 State St., Bridgeport, and are part of the main factory building at 111 Silliman Ave.

A new aerosol pharmaceutical manufacturing division specializing in the production of inhalation therapy aerosols, pressurized vitamins, antibiotics, steroids, and allied products for the durg field has been established at the latter address in the space formerly occupied by the administrative quarters.

A feature of the new research and development laboratories is their refrigerated and pressure filling operations equipment. There is an individual laboratory working area for each of its 15 chemists.

Working in conjunction with the new laboratory is the stability department which has a "walk-in" aging room where aerosol products are kept and studied under accelerated shelf testing conditions at varying temperatures. Hundreds of different products in various containers also are tested in a near-by room-temperature storage area.

A comprehensive library of aerosol background material including reference works and periodicals is also a part of the new facilities.

—★—

O'Brien Joins Thomasson

Donald F. O'Brien, for the past eight years a packaging chemist and supervisor of aerosol products for Colgate-Palmolive Co., New York, has joined Thomasson of Pa., Inc., Norristown, Pa., as technical director of the personal products division. Mr. O'Brien's appointment became effective September 1.

Thomasson is one of the largest contract aerosol packagers in the U.S. The addition of Mr. O'Brien to the firm's product development staff is keyed to Thomasson's expanding aerosol operations contained in its new plant at Norristown, according to David R. Bagenstose, vice-president and general manager. James R. Bampton is president of Thomasson, as well as Krylon, Inc., which markets pressure packaged paints, protective coatings and other aerosol products under its own label.

Expansion of Aerosol Techniques, Inc., is shown in aerial photo. New research-development center and exeoutive offices are at lower left, with parking space adjacent. Factory, quality control and new pharmaceutical lab, upper right, with shipping area beyond.

—★—

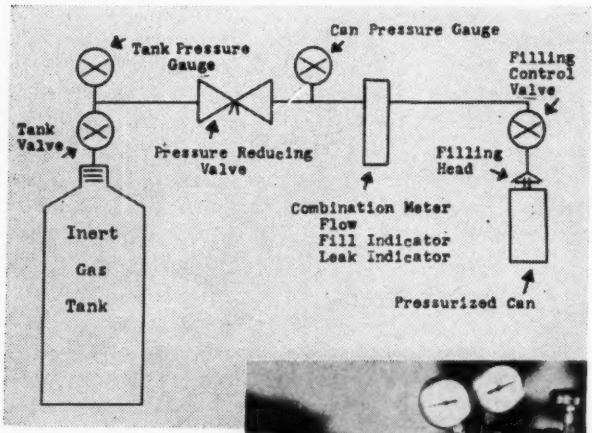
Du Pont Renames Sales Unit

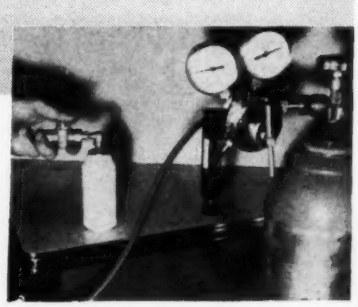
The specialty products sales section of the Freon products division of E. I. du Pont de Nemours & Co., Wilmington, Del., has been renamed the fluoro solvents and chemicals section, it was announced recently. The new name, according to James C. Feldmann, section sales manager, reflects the increasing use of "Freon" fluorinated hydrocarbon products as solvents and chemical intermediates. The name also defines more clearly the product sales and technical service responsibility for all "Freon" products not handled by the division's aerosol propellant and refrigerant sections, he added.

Partial view of recently announced research and development laboratories of Aerosol Techniques, Inc., Bridgeport, Conn., contract pressure packager. Each chemist has individual laboratory working area.

Extremely Timely!
Excitingly New!

INERT GAS FILLING SYSTEM





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As AEROSOL TECHNOLOGISTS who are highly sensitive and responsive to the trends and aspirations of the aerosol industry, Builder's scores another "first" with the development and introduction of this inert gas filling system.

And again Builder's does it at a cost so low as to allow it to come within even the most modest laboratory or pilot production budget.

Engineered to provide an efficiently integrated, easy one-two-three step operation, with a production rate of approximately 10 cans per minute.

Send for "spec" sheet and prices. No obligation.

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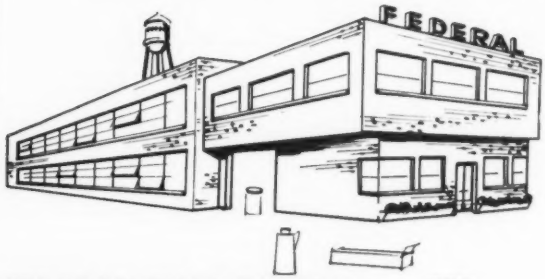

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Here under one roof, you have complete *contract packaging* facilities, giving you the most economical and most efficient packaging service in the Mid-West area. Whatever your needs may be—from ounces to drums; for any type of product—liquids, creams, powders, chemicals; you owe it to yourself to investigate *Federal Service.*

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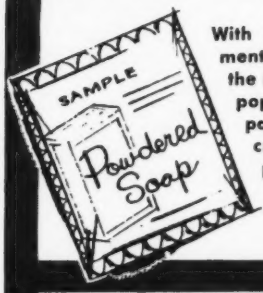

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Du Pont Reports More Pressure Packaged Drugs

THE increasing appearance of drugs and pharmaceuticals in aerosol containers in both the ethical and over-the counter types was reported recently by the Freon Products Division of Del.

Offering easy application and consumer protection, the aerosol's principal advantage, according to drug manufacturers, is that it preserves the sterility and the effective life of the active ingredient because it is a gas tight package which excludes air and contaminants. Metered valves provide consumer economy and are particularly important, drug authorities point out, when dispensing the newer "wonder" drugs which must be applied in carefully measured amounts to be most effective.

Additional advantages for patients are found in aerosol application to painful areas where the medicament is deposited in a spray without the use of applicators which must touch the affected area. For treatment of surface skin disorders, the aerosol provides an almost invisible, but still medically effective film. It also makes it easier to apply medicaments in inaccessible or hairy body areas.

According to the du Pont report, more and more prescription items are being supplied in presure packages. One of the newest items is one containing prednisolene for the treatment of allergic and inflammatory skin infections and contact dermatitis. Called "Meti-Derm," it is marketed by Schering Corp., Bloomfield, N. J. Prednisolone is the first steroid of cortisone to be included in an aerosol pharmaceutical product. It produces a cooling effect that provides relief from the itching of inflamed skin.

Du Pont supplies the "Freon" propellant used in many aerosol pressure packaged pharmaceutical and drug products.

New pressure packaged "Spray Spot Remover" of Spray Products Corp., Camden, N. J., is designed to serve as all-purpose cleaner and spot and stain remover. Packed in a Crown "Spray Tainer," cleaner contains Dow's "Chlorothene" as the solvent.

—★—

Finnish Aerosol Group

A Finnish Aerosol Association was officially organized April 26, 1958. Promotion of pressure packaging in Finland is the aim of the new group, headed by Mr. Talvitie. Membership is not made up by companies or trade groups, but by individuals concerned with the production of constituents of the pressure package, with the import of propellants, and with allied industrial fields.

—★—

Foreign Licensing Bulletin

"Foreign Licensing, Questions and Answers" is the title of a booklet published recently by Pegasus International Corp., 1 East 53rd Street, New York 22. The booklet presents in question and answer form the practical problems involved in setting up a licensing agreement: selecting the right partner, securing patents, setting royalty fees and collecting these in dollars, evaluating potential markets, and a host of other questions.

Pegasus International Corp. has a very practical stake in interesting and educating the American business man in foreign trade potentialities. The corporation was set up in 1950 as a consultant firm specializing in overseas activities including foreign licensing. Projects entrusted to Pegasus in the past have included negotiation of licensing agreements, market studies, promotion, technical reports, planning of executives' itineraries, confidential business investigations, and other phases of consulting.

The firm currently maintains six overseas branches in addition to its New York office. With one exception these branches are staffed by nationals of the country in which they are located. The offices are in London, Paris, Frankfurt, Tokyo, Copenhagen, and Melbourne.

Three new products, recently added to the aerosol line of Fuller Brush Co., Hartford, Conn., are packaged in "Spra-Tainer" cans by Crown Can Division of Crown Cork & Seal Co., Philadelphia. The "Spra-Tainer" package is of seamless construction, permitting all-around lithography. The new products—an insecticide, an insect repellent and a combination deodorant and pesticide for dogs—become part of an already extensive aerosol line, which includes foam cleaners, room deodorants, shaving cream and related household chemical specialties.

NOW --Save ¾¢ to 2¢ per unit with this NEW 500-SERIES AEROSOL VALVE ASSEMBLY

This new one-piece aerosol can-top is being made by large can manufacturers especially for OEL 500-Series Valves. It features pre-assembly of the valve in the can-top, eliminating the usual second crimping operation. Without altering the original OEL 500-Series Valve in any way, the new assembly provides a more compact, labor-saving assembly . . . additional safeguard against leakage . . . savings of ¾¢ to 2¢ per can.

All of the features of the 500-Series OEL Valve are retained, including adaptability to both pressure and cold filling, suitability for products pressurized with nitrogen, mechanical break-up dispensing without premium, etc., etc.

NEW WAY—one-piece top-and-valve assembly needs only ONE SEAL
PRESENT WAY 2 parts, 2 seals
• Ask for samples for testing with your product, specifying container size and dispensing fitments desired.

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SPRAYS . . . FOAMS . . .
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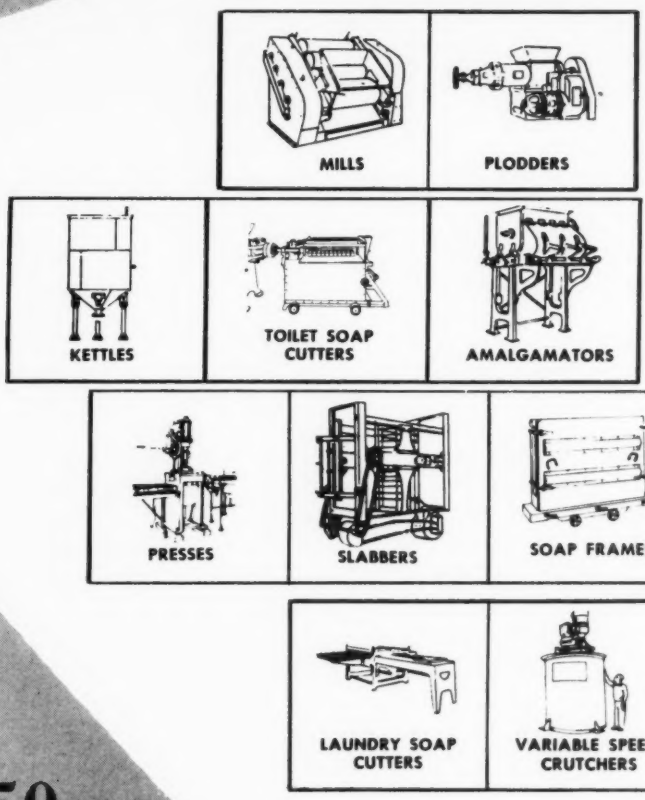
Filling line in plant where "Enden" paste shampoo of Helen Curtis, Inc., Chicago, is manufactured. As filled jars move away from eight-head filling unit, shampoo cools. Labels are then applied and caps screwed on. Turn to page 161 for article on hair shampoos.



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For more than 118 years, Houchin has been the "buy"-word in soap-making machinery. From a low production, luxury business to its present day multi-billion size, Houchin has grown with the industry.

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Advances in

Hair Shampoo Formulation

PART II

By F. V. Wells*
London

THE obvious alternative to clear liquid shampoos are creams, pastes and lotions. Such emulsions frequently contain sodium alkyl sulfates, soap, sodium stearate, polyethylene glycol stearates, magnesium and zinc stearates, etc. as opacifiers and thickeners; the latter group also including methyl cellulose, polyvinyl alcohol, alginic acid salts, unsulfated amides, traces of fatty alcohols and lanolin. The chief danger in formulating opaque, emulsified shampoos is the inclusion of too high a proportion of thickeners, conditioners, opacifiers, stabilizers and other special agents, that will not always rinse readily from the hair but leave unsightly traces of residual matter on drying.

One of the earlier types of cream shampoo, made by a friend of mine (7), was composed chiefly of mixed soaps, with only a comparatively minor addition of triethanolamine lauryl sulfate:

Cream Shampoo (1947)

	parts
Coconut oil	10
Coconut fatty acids	10
Castor oil	4
Stearic acid	10
Triethanolamine	2
Caustic potash	5.5
Caustic soda	0.75
Borax	0.5
Triethanolamine lauryl sulfate	3
Propylene glycol	2
Glyceryl monostearate (self-emulsifying)	2
Stearyl alcohol	2
Alcohol (ethyl)	4
Water	44

Take the coconut and castor oils, alkalis, glycol, spirit and 10 parts of water, and saponify. Add a further 12 parts of water, the stearic and coconut fatty acids, and stir until all is emulsified. The exact proportion of alkali required will naturally vary with the saponification values of the fatty materials used and the proportion of fatty acid allowed to remain unsaponified. The caustic potash in this formula is the 89 per cent grade and the caustic soda 98 per cent. The shampoo was finished neutral to phenolphthalein and only faintly alkaline to litmus. It was tinted with naphthol green or tetrayol yellow, and was said to have excellent sudsing properties.

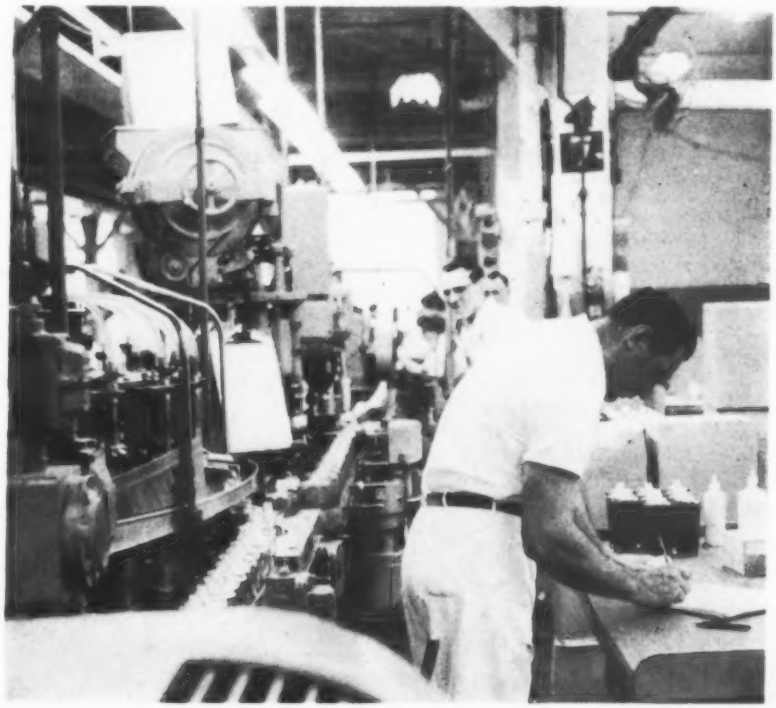
The paste type shampoo quoted a year or two later by Pantaleoni and co-workers consisted quite simply of:

	parts
Sodium stearate	8
Lanolin	1
Sodium lauryl sulfate	50
Water	41

Here we already see the transition from a predominantly saponaceous cream to one that is predominantly synthetic detergent-based.

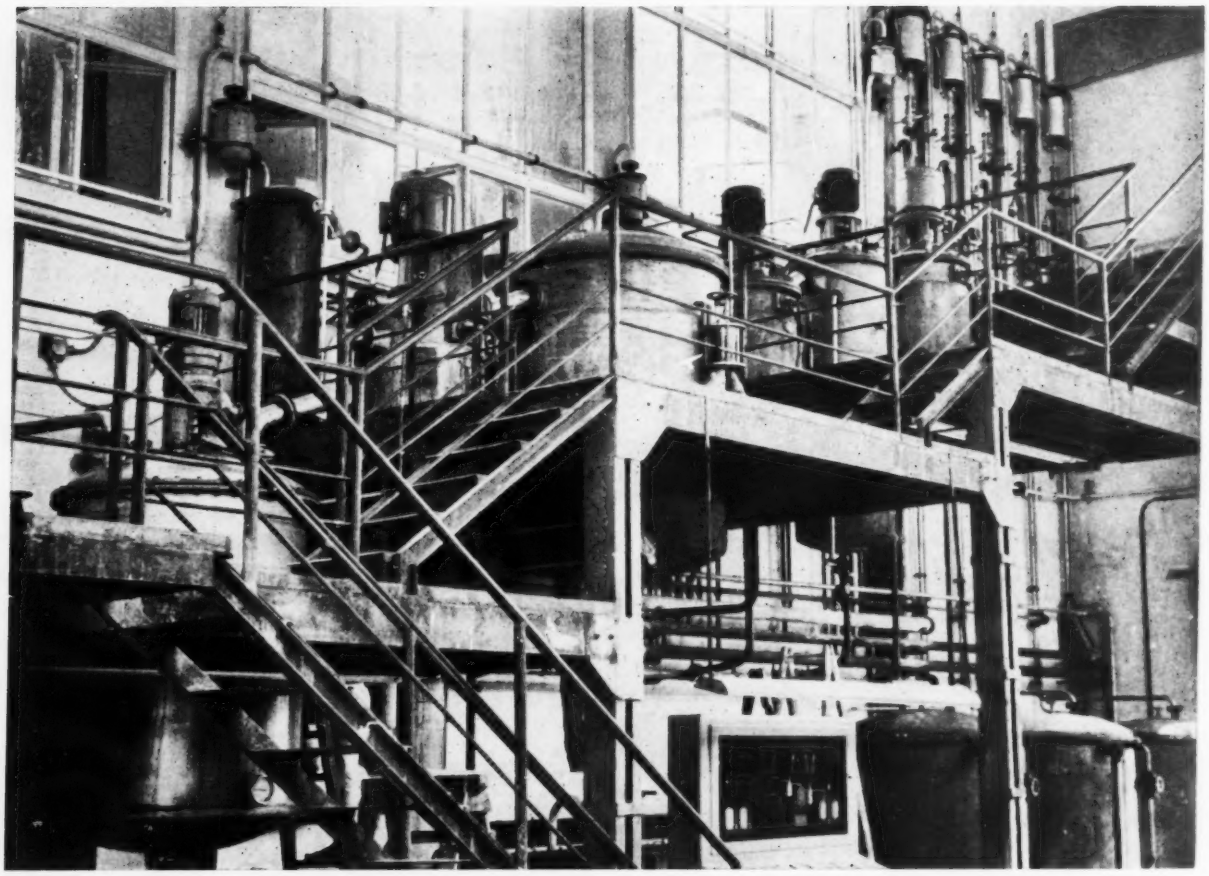
*Editor "Soap, Perfumer & Cosmetics" and consultant perfumer.

Shampoo filling line in operation in plant of John H. Breck, Inc., Springfield Mass.



MECCANICHE MODERNE

Corso Sempione, 51 BUSTO ARSIZIO (Italy)



500 Kgs. per hour "SOLFON" plant in operation

"SOLFON" CONTINUOUS SULFONATION PLANT—"Ballestra" Patent Basic operating principles

Pre-dilution of reacting materials into the reaction product and consequently:
—No more local overheating!
—No more di-sulfonated materials!
—No more product discoloration!
—No more temperature troubles as with batch plants!
—No more ice dilution of sulfonated materials: water is perfectly O.K.!
—No more expensive refrigerating units!

Manufacturing characteristics

—Cooling by means of tap water (Max. temperature 20° C.)
—Constant pH values in each step: each vessel is manufactured in the most resistant material to suit the pH value and consequently: no more corrosion.
—Perfect and simple proportioning of the reacting materials with no moving parts for doing it.
—Perfectly constant reaction times in each step and consequently perfectly homogeneous products.
—Totally automatic operation, controlled by one single control board.
—Possibility of getting slurries with high active materials, very low mineral salts content and practically no unsulfonated materials.
—A very wide range of sulfonable materials can be employed as raw material.

Economical advantages

Longer lasting plant: lower mortgage percentages.
—A solfon plant requires about 1/5 of the space required by a batch plant of the same capacity: substantial money savings on space and building costs.
—Very low operating costs: one man is sufficient to inspect the running plant at regular intervals.
—Lower current consumption because no refrigerating unit is needed and less power is required due to the smaller dimensions of the vessels.
—A high degree of sulfonation prevents waste of dodecylbenzene in drying the slurry.

U. S. Sales Representatives:
American Associates, 520 Fifth Ave., N.Y. 36, N.Y.

Cream Shampoo 1

	parts
Sodium lauryl sulfate (85% active material)	27
Stearic acid	7
Caustic soda (97/99%)	1
Water	65

The first and second items and 50 parts of the water are heated and mixed together to 80°C. The caustic soda dissolved in the rest of the water is added at 75°C and stirring with heat continued for 10-15 minutes. At that stage the heat is switched off and slow stirring continued until the batch cools. Perfume and color may be added at about 40°C. A fraction of one per cent of lanolin or small proportions of alkylolamides etc. may be incorporated in the formula.

This is a more modern type of formula. The following was also published in 1957 (4):

Cream Shampoo 2

	parts
Sodium lauryl sulfate (83-86% active)	40
Emusifying wax, B.P.	3
Carboxymethyl cellulose (high viscosity)	2
Sodium chloride	2
Water	53

The first two items and 25 parts of the water are gently stirred together and heated to 80°C. The carboxymethyl cellulose is dissolved in 17 or 18 parts of the water at a high temperature—preferably at the boil. Complete solution free from lump-formation must be insured. This is then added to the first part of the batch. Finally, the salt, dissolved in the balance of water, is added. Mixing and stirring are continued as in the previous formula. This type of cream-paste is characterized by a pearly sheen.

Many more formulae for cream shampoos could be given, but it seems as well to conclude this section with a brief discussion of liquid cream or lotion shampoos.

I agree entirely with Dr. Donald H. Powers when he writes (8) that there is no particular reason for expecting creamy shampoos to be superior in performance (or dermatologically) to a well-made clear shampoo. "While there appears to be some feeling among buyers that a creamy lotion is gentler and milder, this mild action is actually dependent upon surfactant ratios and cleansing action." Exactly. However, there is still a demand for attractive uniformly opaque or creamy lotion shampoos.

Liquid Cream Shampoo 1

	parts
Sodium lauryl sulfate paste	15
Triethanolamine lauryl sulfate	15
Glyceryl monostearate, self-emulsifying	2
Ammonium chloride	3
Water	65

The ammonium chloride is dissolved in some of the water and then added to the rest of the batch, previously dissolved and thoroughly mixed, with application of sufficient heat. Up to 0.5 per cent of stearic acid may be included in order to enhance opacity. Instead of the triethanolamine salt of sulfated lauryl alcohol, the ammonium or mixed ammonium triethanolamine salt (say 22 to eight parts instead of 15:15.)

Behenic acid, partly neutralized with triethanolamine, is cited as a preferred opacifying agent—as well as an emulsion stabilizer and hair conditioner—in an interesting patent (9). One of the protected formulae given in this patent specification is composed as follows:

Liquid Cream Shampoo 2
(Patented—See Reference 9)

	parts
Detergent salt	25
Behenic acid	3.5
Lanolin	0.5
Triethanolamine	1.2
Methyl p.-hydroxybenzoate	0.15
Perfume oil	0.4
Water	69.25

The detergent salt is a sodium salt of sulfated monoglycerides of hydrogenated coconut oil fatty acids. It contains about 10 per cent by weight of inorganic sulfate formed in its manufacture. It, the preservative and water are heated to 180°F.; and the lanolin and behenic acid are melted at a temperature of about 200°F., and added to the detergent solution. The ingredients are mixed to form a homogeneous mixture and the triethanolamine is added, reacting partially with the behenic acid in situ. The perfume is added at 115°F. and the batch is cooled with continuous stirring at 80° to 90°F. The resulting liquid cream shampoo has a pH of about 6.5.

The advantage of behenic acid over stearic acid is that the former imparts stable creaminess, in this formula, whereas, if the latter is substituted, transparency and separation follow on storage.

Liquid Cream Shampoo 3

	parts
Sodium salt of sulfated, ethoxylated lauryl alcohol	40
Magnesium stearate	2
Sodium chloride	2-2.5
Water	56

This is a pearly milk shampoo devised by Cyclo Chemicals, Ltd.

Egg yolk, dehydrated egg; traces of lanolin; glyceryl and glycol stearates, polyvinyl alcohol, phosphoric acid, liquid lanolin specialties etc. are sometimes included in such formulae as the foregoing. A pearly and viscous liquid cream shampoo may be made in accordance with the following formula (4):

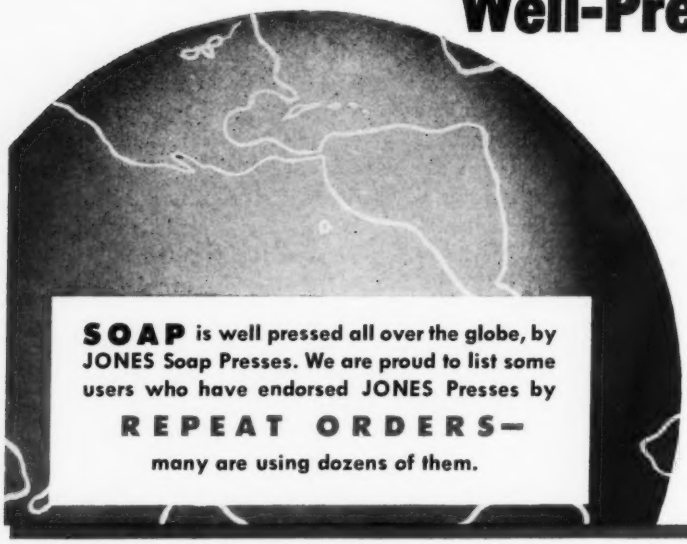
Liquid Cream Shampoo 4

	parts
Sodium lauryl sulfate (83-86% active)	24
Lauryl diethanolamide	11
Ethylene glycol Monostearate	5
Phosphoric acid	1
Water	59

From a different trade source (11) comes the following suggestion, which should certainly prove stable and emollient, though probably lacking somewhat in profuse sudsing action:

(*Turn to Page* 165))

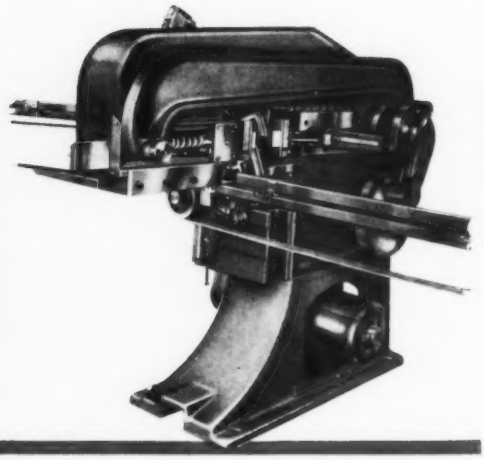
The SUN never sets on SOAP—
Well-Pressed by JONES!



SOAP is well pressed all over the globe, by JONES Soap Presses. We are proud to list some users who have endorsed JONES Presses by

REPEAT ORDERS—

many are using dozens of them.



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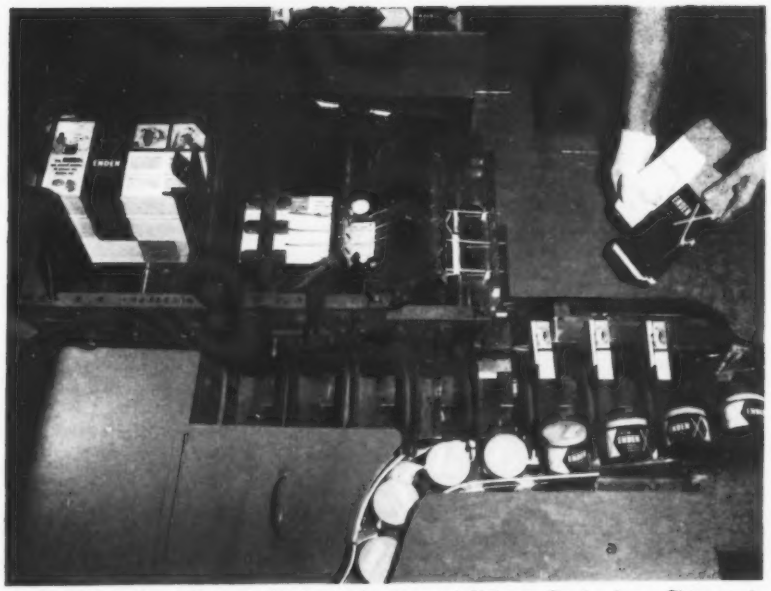

Final step in the filling of "Enden" shampoo of Helene Curtis, Inc., Chicago is applying of label and insertion of container in carton.

Liquid Cream Shampoo 5

	per cent
Cetyl/Stearyl alcohol (10% sulphated)	6
Triethanolamine lauryl sulfate (50% solution)	30
Isopropyl myristate	5
Hexylene glycol	5
Water	34
Sodium carboxymethyl cellulose (1% solution)	20
Perfume	q.s.

Procedure: Melt the cetyl stearyl alcohol and the isopropyl myristate together at the lowest possible temperature. Gradually add the water and hexylene glycol mixture with steady agitation, then incorporate the triethanolamine lauryl sulfate. Finally add the sodium carboxymethyl cellulose and perfume and stir until homogeneous.

Shampoos in jelly form are easy enough to make, especially with surface active agents of the ethoxylated, sulfated type, whose viscosity can be so markedly increased by the addition of sodium chloride.

In passing, we may refer to the possibilities as shampoo bases of protein fatty acid condensates (e.g "Lamepons"), phosporic acid-derived surface active agents (12), foaming cationic agents (13), and the ethanolamine salts of sulfosuccinamic acid derivatives (e.g. di-monoethanolamine N-methyl-N-lauryl sulfosuccinamate) (14).

Detergent Blends

We now come to a consideration of shampoos specially blended for optimum detergent, cosmetic and dermatological action. It is not enough merely to devise a shampoo of attractive appearance and maximum foaming properties. Foam is closely associated in the public mind with cleansing power, but neither foaming and detergency nor detergency and "good shampooing" can be regarded as synonymous. There can be excessive detergency, as Snell, Zussman and others have rightly emphasized, and while there can perhaps be excessive foaming, the psychological effect of foam should not be permitted to swamp every other consideration. A good shampoo must be judged by its performance, quick rinsing properties and all-round after effects. Hence the need for a properly informed approach to formulation.

I agree entirely with the anonymous writer in *Schimmel Briefs* (18) that "soap shampoos cannot be considered obsolete by any means. Products having a coconut soap base show excellent foaming and cleansing properties in water which has a fairly low degree of hardness. Moreover, washing with a soap leaves the hair in a more manageable state than washing with a sulfated detergent. Coconut oil shampoos which are correctly made do not require any special ingredients for 'conditioning' the hair." In point of fact, balanced combinations of soap with synthetic detergents and of anionic detergents with non-ionic agents, can result in extremely satisfactory shampoos. A simple type of blend is what may be termed the "modified soapless" shampoo, which is essentially a solution of ethanolamine lauryl sulfate plus about two or three per cent of triethanolamine laurate formed in situ.

As was mentioned in the course of my lecture at the Sorbonne (1), a shampoo should leave the hair and scalp cosmetically clean, lustrous and attractive: free from visible residues of scalp debris, deposited dirt, soap films and emollients. The hair should look clean, feel clean and smell clean. It should not look dull, devitalized or greasy, as so many shampooed heads now look, two or three days after treatment.

In my early experiments, I deliberately avoided the more drastically "efficient" detergents, preferring those with only a moderate detergent effect. I thus obtained very encouraging results with the polyoxyethylene ethers of lauryl and myristyl alcohols—the latter being prepared at my suggestion by Glovers (Chemicals), Ltd. of Leeds, England. In conjunction with these products I used smaller additions of triethanolamine laurate or oleate, triethanolamine lauryl sulfate and other modifying agents. These mild and versatile ethers themselves give slightly acid to neutral aqueous solutions. They are usually balanced to exhibit the greatest

(*Turn to Page* 207)

Continuous Soap Plants

Photograph of a MAZZONI Vacuum Soap Dryer automatically producing toilet soap base for toilet soap manufacture.

• • •

★ The Vacuum Process, over all other old and new cooling methods, enables you to make use of the water at the temperature available at any factory as it is possible to cool the soap at such a temperature because of the vacuum and the peculiar devices provided — without resorting to expensive cooling equipment — so that its consistency is satisfactory no matter what the cooling water temperature is.

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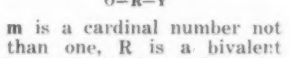
NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine:—MacNair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be $1.00 per copy.

No. 2,834,707. Insecticidal Compositions and Method of Using Same, patented by Fred Smith, Wayzata, and Laurence K. Cutkomp, St. Paul, Minn., and Abdel Aziz Fathy, Giza, Egypt, assignors to Regents of the University of Minnesota, Minneapolis. An insecticidal composition of matter is patented comprising a polymer of a compound having the following formula:

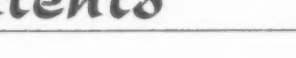
in which R and R' are, respectively, an alkyl group and a perfluoro alkyl group, each containing from one to 20 carbon atoms, a carrier therefor.

No. 2,841,524. Adducts of Trithiane with Sulfenyl Chlorides and Phosphites, patented by Gail H. Birum, Dayton, O., assignor to Monsanto Chemical Co., St. Louis, Mo. This patent claims the phosphorus-containing product of the reaction of an adduct in which one mole of trithiane is combined with from one to three moles of sulfenyl chloride of formula R'SCl in which R' is a hydrocarbon radical of from one to eight carbon atoms which is free of non-benzenoid unsaturation and which contains at least one substituent selected from the class consisting of halogen and the nitro radical, with from one to five moles per mole of said sulfenyl chloride of a trivalent phosphorus acid ester of the formula:



wherein **m** is a cardinal number not greater than one, R is a bivalent hydrocarbon radical selected from the class consisting of lower alkyl, cyclohexyl and aryl, aralkyl and alkaryl radicals containing not more than ten carbon atoms, and Y is selected from the class consisting of hydrogen and chlorine atoms.

An insecticidal composition is also claimed comprising an inert carrier and as the essential effective ingredient the phosphorus-containing product of the reaction of an adduct in which one mole of trithiane is combined with from one to three moles of a sulfenyl chloride of the formula R'SCl in which R' is a hydrocarbon radical of from one to eight carbon atoms which is free of non-benzenoid unsaturation and which contains at least one substituent selected from the class consisting of halogen and the nitro radical, with from one to five moles per mole of said sulfenyl chloride of a trivalent phosphorus acid ester of the formula:



wherein **m** is a cardinal number not greater than one, R is a bivalent hydrocarbon radical selected from the class consisting of lower alkyl, cyclohexyl and aryl, arylalkyl and alkaryl radicals containing not more than ten carbon atoms, and Y is selected from the class consisting of hydrogen and chlorine atoms.

No. 2,843,550. Synthetic Detergent Compositions, patented by Richard D. Stayner, Berkeley, Calif., assignor to California Research Corp., San Francisco. Covered is a detergent composition consisting essentially of alkali metal salts of sulfated C_{12}-C_{18} alkylolamides of C_{16}-C_{18} hydrogenated tallow fatty acids, alkali metal C_9-C_{15} monoalkyl benzene sulfonate detergent, the former being present in an amount, by weight, of about 15% to 50%, and the latter, 50% to 85%, by weight, the total of the two, and as a foam-improving agent, about 5% to 70%, by weight, based on the sulfated alkylolamide salt, of a normal, saturated C_{16}-C_{18} aliphatic alcohol.

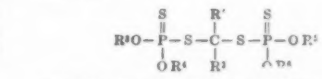
No. 2,845,203. Filling and Sealing Device, patented by Norman Potash, Baltimore Md. Described is a filling and dispensing valve for pressurized containers comprising an upper body portion and a lower valve portion connected by an intermediate necked portion said necked portion being axially extensible and of lesser diameter than both said body and valve portions, said necked portion having radial openings therethrough and said body and neck portions having an axial opening connecting with said radial openings.

No. 2,845,391. Synthetic Detergent Bar, patented by Donald F. Searle, Napa, Calif., assignor to California Research Corp., San Francisco. A solid shaped synthetic detergent composition is disclosed which comprises as its essential components: (1) a sodium C_{12}-C_{18} monoalkyl benzene sulfonate; (2) a non-frosting sodium salt of an inorganic acid selected from the group consisting of sodium bicarbonate and tetra-sodium pyrophosphate; (3) a salt selected from the group consisting of alkaline earth metal and aluminum salts of saturated C_{14}-C_{20} fatty acids; (4) a starch binder; (5) sodium sulfate in an amount ranging from 0 to less than 5% of the total weight of said five components, the proportions by weight of said five components, the proportions by weight of said components (1), (2), (3) and (4) on the basis of the total weight of 100 parts of said five components lying within the following ranges:

Component:	Parts
1. Sulfonate	30 to 50
2. Non-frosting salt of inorganic acid	10 to 40
3. Salt of saturated fatty acid	1 to 2
4. Starch	10 to 40

said composition containing not more than 20 parts of water per 100 parts of the total weight of said five components.

No. 2,841,520. Pesticidal Phosphorus Esters, patented by Joe R. Willard and John F. Henahan, Middleport, N. Y., assignors to Food Machinery and Chemical Corp., New York. Covered is a compound of the formula:



wherein R' and R_2 are different radicals selected from the group consisting of chloro, nitro, S-(di-lower-alkoxy-phosphinothioyl) mercapto and phenyl radicals, and R_3, R_4, R_5 and R_6 are lower alkyl radicals.

5. A pesticidal composition comprising of a toxic concentration of a compound of claim 1 and an inert pesticidal adjuvant as carrier therefor.

8. A method of controlling mite and insect pests comprising contacting said pests with an effective concentration of a compound of claim 1.

No. 2,842,476. Insecticidal Compositions, patented by Albert A. Schreiber, Salem, N.Y., assignor to McLaughlin Gormley King Co., Minneapolis. Claimed under this patent is an anhydrous insecticidal composition comprising, dissolved in a kerosene type mineral oil fraction, a pyrethroid and from about 2 to 10 times its weight of a nitrogen base salt, selected from the group consisting of —NH_4 and amines containing up to 8 carbon atoms, of an alkyl aryl monosulfonic acid, whose alkyl groups contain 6-30 carbon atoms and whose aryl groups are selected from the group consisting of benzene and naphthalene.

No. 2,841,522. Fungicidal Chloronitrobenzoic Acid Ester Composition and Method of Using Same, patented by Calvin N. Wolf, New York, assignor by mesne assignment to Pittsburgh Coke and Chemical Co. Claimed is a fungicidal composition comprising a fungicidally inert surface-active agent and an ester of a chloronitrobenzoic acid.

No. 2,844,507. DDT Stabilized Compositions, patented by Ralph Rodriguez-Torrent, Winter Park and Robert M. Fitzwater, Orlando, Fla., dedicated to the Public. This patent claims a composition of matter comprising DDT, 20-30%; alkylated naphthalenes, 60-70%; emulsifier, 3-10%; and sodium thiosulfate, 0.1-2.0%.

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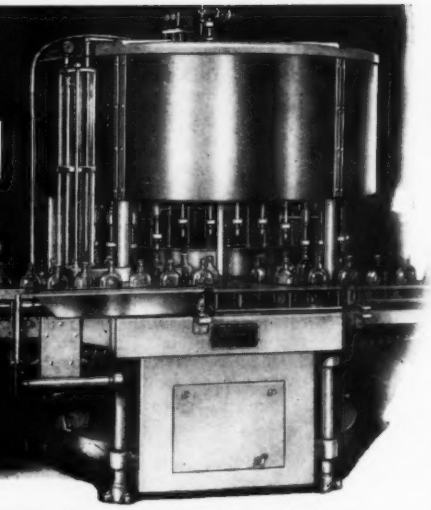

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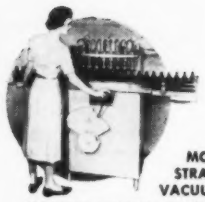

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Book Reviews

All about Concentrated Pesticide Sprays

BOUT 30 million acres are treated with concentrated pesticidal and other sprays every year on the North American continent, according to a recently published text entitled: "Concentrated Spray Equipment, Mixtures and Application Methods." This book covers methods and equipment for concentrated spray application of insecticides, fungicides, plant hormones, herbicides, silvicides, nutrients, fertilizers and insect disease organisms. Chapter I is devoted to terminology. Particle size and terms relating to concentrated and dilute spray, aerosol, smoke and dust application are defined. Definitions of dust applicators include among ground equipment: liquefied gas sprayer (pressure dispensed spray), thermal generators (mist, fog, or aerosol); mist blowers; low gallonage power concentrate sprayers; and compressed air power atomizers. Air borne equipment here defined includes the helicopter mist sprayer and the airplane mist sprayer.

Particle size of insecticides and its relation to application, distribution, and deposit is the subject of the second chapter, entitled "Fundamentals of Application." Ground spray equipment is treated in detail in chapter III and aerial equipment in chapter IV. Chapter V supplies information on methods of mixing and formulating insecticides and fungicides for ground and aerial application, including requisites of application, methods of preparation, dosage, concentration, gallonage, formulations for specific pests and other details. The sixth chapter is devoted entirely to the control of weeds and woody plants.

Aerosols are discussed in detail in chapter VII which deals briefly with the history of the pressure packaged insecticide, evaluates its pros and cons, and supplies information on greenhouse aerosols and cattle sprays. Thermal aerosols, nozzle type machines, and other devices are also briefly considered.

Spray evaluation methods, suggestions for course work, and other pertinent information is included in the form of an appendix. Each chapter is followed by literature references.

The avowed goal of this text is "to meet the requirements of grower, forester, home owner, municipality, research worker, extension worker, teacher, student, and equipment and chemical manufacturer."

Concentrated Spray Equipment, Mixtures and Application Methods, by Samuel F. Potts, U.S. Forest Service, published by Dorland Brooks, Caldwell, N.J., 1958. Cloth bound, 598 pages, nine and one quarter by six inches, price $12.50.

★

Data on Adipic

Adipic Acid and its Derivatives, published by E. I. du Pont de Nemours & Co., Wilmington, Del. Cloth bound, 8½ inches by 11¼ inches, pp. 77, price $1.00.

This handsome illustrated book outlines the history of adipic acid from its humble beginnings to its basic role in the development of nylon and other plastic polymers. Physical and chemical properties of the acid are described.

A list of adipic acid derivatives is included, which indicates suggested uses for individual compounds. The uses are cross-indexed by industries. Their wide range includes the sodium salt of sulfurated N,N′-bis (hydroxyethyl) -adipamide as an anionic detergent; the diadipates of ethylene or diethylene glycol in hydraulic fluids; monoethyl adipate as a foam inhibitor in automotive lubricants; etc. Certain esters of adipic acid can be used to prevent crystallization of DDT and its analogues from aqueous emulsions. Dibutyl adipate is reported to be an effective repellant against the American dog tick. Application in aerosols or as an emulsion to fabrics is suggested at the rate of two grams per square foot.

★

New Chem. Processes

A fifth volume has just appeared in the "Modern Chemical Processes" series. Like its predecessors, it contains a number of up-to-date articles on chemical processing technology, each authored by a member of the editorial staff of *Industrial and Engineering Chemistry*, and one or more men in the industry, experts in their respective fields.

Modern Chemical Processes, volume 5, by the Editors of *Industrial & Engineering Chemistry* published by Reinhold Publishing Corp., New York, 1958. Cloth bound, eleven and a half by eight and a quarter inches, 154 pages, price $5.00.

★

"A-C" Polyethylene Data

Information on the use of "A-C" emulsifiable polyethylene 629 as a textile finishing agent is contained in 16-page brochure just issued by Semet-Solvay Petrochemical Division of Allied Chemical Corp., 40 Rector Street, New York 6. The industrial application of "A-C" polyethylene emulsions is said to improve the fabric in hand, tear strength, crease recovery, abrasion resistance, and sewability.

★

Reilly Publishes Index

Reilly Tar and Chemical Corp., Indianapolis, recently published the fourth edition of its "Chemical Index" listing alphabetically and by classes chemicals offered by the firm. Twelve chemicals have been added to the list in this edition and 20 other changes were made. Copies are available.

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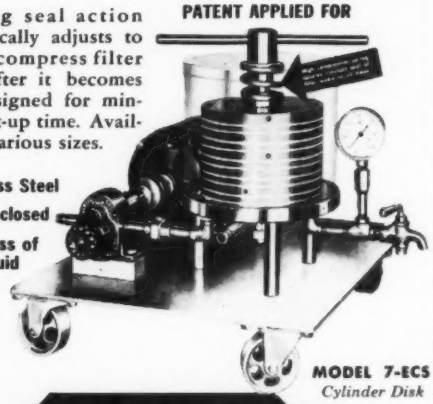

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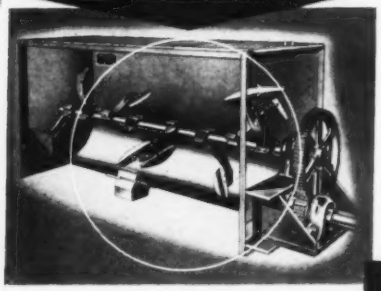

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Products and PROCESSES

New Amines Series

A new series of quaternized ethoxylated amines trademarked "Ethoquads" was introduced last month by the chemical division of Armour and Co., Chicago.

The new chemicals are water soluble cationic surface active agents with properties combining those of quaternary ammonium chlorides and ethoxylated fatty amines. They differ from the generally available quaternary ammonium compounds in the type of groups attached to the nitrogen.

It is expected the chemical and physical properties offered by these new quaternary ammonium chlorides will be useful in a variety of commercial applications, according to the company. Additional information is available from Armour and Co., chemical division, 1355 W. 31 St., Chicago 9.

★

BHC Plus Syndet Kills Lice

A shampoo formulation incorporating gamma benzene hexachloride and a detergent is said to be an effective one-shot treatment of head lice and nits on humans. "Kwell" shampoo, made by Reed & Carnrick, Jersey City, was tested on 47 children by the Long Beach, Calif., Department of Public Health. One shampooing reportedly cleared up 39 infestations; one or two additional washings eliminated the remainder. Application calls for wetting of the hair, lathering for four minutes, and thorough rinsing. The shampoo is sold on prescription only.

★

Soap and Syndet Leaves

To make soap sachets, molten soap is deposited on both sides of a very thin layer of flexible, glazed, tranparent paper, then dried very rapidly. The coated paper is cut into small leaves and made into books, sachets, packets etc. British Patent 793,182; 1958; Heaton & Josephy, Ltd., Leeds.

A non-saponaceous shampoo leaf requires as a carrier a high wet strength paper leaf, which does not disintegrate in use. A synthetic detergent coating is deposited on both faces of the paper leaf. A water soluble salt of a sulfated fatty alcohol is suggested as the active substance, such as for instance sodium lauryl sulfate. Whatever detergent is chosen, it must have high detergent properties so that a film-like coating will suffice for the shampooing of one head of hair. British Patent 790,492; 1958; Safodik (Gt. Britain) Ltd., Leeds.

★

Aerosol Hand Cream

A hand cream for pressure packaging with a fluorinated hydrocarbon propellant might have the following composition:

	Grams
A Stearic acid	160.0
A Lanette wax	11.2
A Lanolin	32.0
B Triethanolamine	64.0
B Glycerol	160.0
B Sorbitol syrup 70%	96.0
B Distilled water	1056.0
B Sodium benzoate	1.6
C Perfume	q.s.

Heat ingredients marked A to 75°C. Also heat ingredients B to same temperature. Add A to B with constant stirring and continue to stir until the temperature is down to 30°C. Add perfume and homogenize cream.

Charge: hand cream 90 parts by weight and dichlorodifluoromethane 10 parts by weight. Soap, Perfumery & Cosmetics, June 1958, p. 561. Formula developed by Metal Box Co., Acton, London W. 3 and W. J. Bush & Co., London E. 8.

★

New Detergent Materials

A new group of sperm oil derived blends of fatty acids and fatty alcohols suitable for sulfonation, saponification, ethoxylation, and a number of other reactions pertaining to the detergent and chemical specialties field has just been introduced by Werner G. Smith, Inc., 1730 Train Ave., Cleveland 13.

The manufacturer stresses that in both the oleyl acids and cetyl acids blend the alcohols exist as free alcohols and the acids as free acids, and thus can be reacted independently. The fatty acids may be converted to amides and the alcohols used as superfatting agents and emulsion stabilizers. By solfonation, wetting agents are produced which are said to exhibit unusual properties. Reaction of both acids and alcohols with ethylene oxide yields adducts of a very wide range of molecular weights.

Both "WGS" cetyl acids and oleyl acids blends have a comparatively low melting point (45°C) and feel like hard, tough waxy fats. They are priced lower than fatty alcohols. Data sheets and samples are available on letterhead request.

★

New Cream Base

A new cream base material, claimed effective in transferring active ingredients through the skin tissue, has just become available in experimental quantities from van Ameringen-Haebler, Inc., 521 West 57th Street, New York 19.

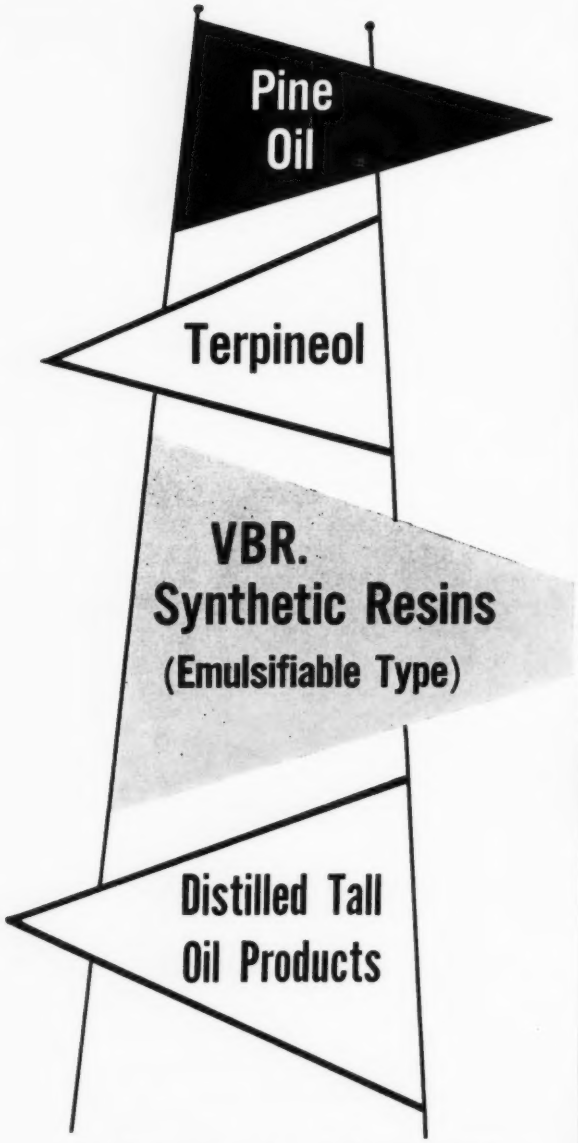
"Transdermine" is a lecithin like synthetic material containing all of the major chemical entities present in natural lecithin. An ivory white waxy solid, the novel material is said to be readily converted into an emulsified cream. It may be incorporated in topical preparations in proportions up to 15 per cent without necessitating a new drug application.

★

Nonionics' Applications

A liquid dishwashing compound combining nonionic and anionic surface active ingredients has better foaming and detergent properties than either product alone, according to Leon Raphael's article on "Nonionic Surface Active Agents" (Industrial Applica-

(*Turn to Page* 177)



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VACUUM FILLER

- Fills Directly from Drum. No Overhead Tanks Required.
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- Up to 10 Spouts for Small Containers.

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Cleans Itself, 5 minutes.

ONLY ONE OPERATOR
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Any Cap — Any Container — Perfect Sealing!

Adjustable Tension Device Controls Cap Tightness. Portable, Flexible, Fast; Easy to Operate.

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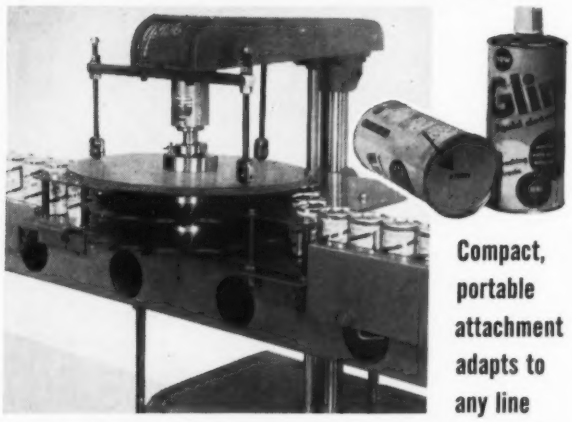
New way to Code Cans, Jars, Bottles



Compact, portable attachment adapts to any line

The Gottscho "Model TB" MARKOCODER® machine is a unique, fully automatic, packaging line attachment for coding *bottoms* of cans, jars, bottles, canisters, paper containers at speeds up to 600 per minute. Makes consistently clean, permanent ink imprints. Designed for quick code changes, simple maintenance, easy adjustment for different size cans. Offers all the advantages of a fixed-installation imprinter without requiring alteration of present line set-up.

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WHEN is the right time to replace a certain piece of equipment? This is an important and frequently vital question which deserves close scrutiny. Premature replacement wastes capital dollars, delay may cut profits. A replacement policy and program should be worked out on the basis of financial and production insight to safeguard the future of the firm. A number of pertinent questions should be asked and answered prior to any decision.

Is the present equipment worn out? The answer may be found by comparing current test runs with results recorded six months and a year ago. Operators who have worked with the machine regularly and over an extended period should also be consulted. It should be easy to eliminate premature replacement, but one must also remember that to "squeeze out" a few extra runs from a worn out piece of equipment usually leads to a waste of budget dollars and to high labor cost.

Is the machine obsolete? Are there newer models of this machine or other recent designs which will produce more in less time, without sacrifice in quality. If the answer is in the affirmative can you afford the old machine and still remain competitive?

Is the current equipment adequate? Adequacy covers a wide range of questions: capacity range, maximum hourly output, quality of the product (accuracy, fineness etc.) . Present yields should be compared quantitively and qualitatively with former output by the same machine and with similar products made currently by new models. Importance of operating speed should be evaluated in the light of average business volume and incidence of sudden pressure periods.

Is the old machine in step with newer equipment lately installed in your plant? A blanket renewal of plant is rare. Usually an enterprise does its replacement piece by piece. An obsolete or worn piece may hold back the entire flow of work and wipe out all benefit from new and efficient units. It may stand in the way of converting batch operations into continuous processing, thus wasting time and laber.

Has a new engineering invention so obsoleted your machine, that it would pay you to scrap it, regardless of age and wear? Some revolutions in design improve the product or the process or cut costs to an extent where you simply cannot afford to be conservative.

Have new features been developed which your machine lacks? These might include special controls, attachments, safety devices etc.

Versatility is another question to be considered. If a new model has appeared on the market which will perform the task of your current equipment and is adaptable to other work in your field, then you may decide on replacement no matter whether the old machine has much or little useful life left.

If new equipment is available which will convert a hand or semi-automatic operation into an automatic one, replacement is probably in order in the light of high labor costs.

Ease of set-up and operation are points to be considered on a comparative basis. Reliability and uniformity of performance play a part in the decision.

Cost of maintenance and repair in an old machine can grow to the point where it eats up all profit. If the bookkeeping records show that these costs are growing out of hand it is certainly time to buy new equipment.

Worn and tired machinery pushes up production costs by turning out an excessive number of rejects and faulty products.

New models frequently are streamlined for minimum maintenance cost and time to an extent where this saving alone may actually pay off replacement expenses in a very short time. Economy in floor space receives much attention in new designs and is an important point for consideration by the potential purchaser. It may make room for that extra piece of machinery or for that extra process which the plant has heretofore not been able to accomodate. It may even be found that a new machine can take the place of two or more older ones which consume floor space and man hours.

One of the cardinal questions in plant purchasing is, of course, financing. If funds are available the considerations are simple. However, if the purchase entails costly outside financing careful calculations are in order. A well balanced judgment on the necessity and soundness of plant replacements can well be a decisive factor in the survival of an industrial enterprise.

—★—

Hunt Makes "Rota" Still

Rodney Hunt Machine Co., Orange, Mass., announced recently purchase of exclusive rights to manufacture and market a high-vacuum molecular distillation unit. Hunt bought from Arthur F. Smith Co., Rochester, N.Y., rights pertaining to the "Rota Film" still, along with engineering developments, inventory and patents. Commercial scale units are currently in operation for distillation of petroleum waxes, deodorization of oils, etc.

—★—

New Stauffer Bulletin

A technical information bulletin has been issued by Stauffer Chemical Co., New York, giving a comprehensive roundup of technical data on the firm's new insecticide-miticide trademarked "Trithion."

Information about the product may be obtained from the company's agricultural chemicals division, 380 Madison Ave., New York.

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GIVAUDAN-DELAWANNA, INC.
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SOAP PLANT *Observer*

By John W. McCutcheon
Consulting Chemist

ON a recent trip to Canada we checked on the detergent buying habits of our northern neighbors. We found that they are buying much the same cleaning agents as we do. The large three pound giant size packages were much in evidence, but we did not see many of the giant-giant size. Canadians buy "Tide" (P&G), "Rinso" (Lever), "Cheer" (P&G), "Dreft" (P&G), "Vel" (Colgate), "Breeze" (Lever), "Fab" (Colgate), "All" (Lever), "Lux" (Lever), "Fels" (Fels), "Surf" (Lever), all familiar products by companies having their counterparts in the United States.

In addition we noted a few products made expressly for the Canadian market, such as "Maple Leaf" soap flakes (Canada Packers), "Princess" soap flakes (Colgate); and "Bonus" (P&G).

To the casual observer prices do not appear to differ too widely from those prevailing in the United States. However, net weights of packages of similar type products vary from our packages and, furthermore, the formulation will probably also be somewhat different from that offered to the American consumer. For these reasons a true price comparison would require a fairly thorough analysis. "Oxydol" (P&G) for example sells in the U.S. in one pound four ounce packages at about 35 cents, in Canada in one pound six ounce packages at 41 cents. "All" is marketed in the U.S. in one pound eight ounce units at 39 cents and in 32 ounce units at 65 cents in Canada.

Canadian giant sizes usually hold two pounds plus compared with three pounds plus for American giant packages. A 79 cent package of "Tide" for instance contains three pounds one and one quarter

ounces in the U.S. and two pounds five ounces north of the border. An American package of "Rinso" has a net weight of three pounds eight and one half ounces and sells for 81 cents, while its counterpart in Canada holding only two pounds and 13 ounces sells for 83 cents. On a pound for pound basis and allowing about five per cent discount on the American dollar, heavy duty and low sudsing detergents are generally priced 35 to 40 per cent higher than the corresponding products in the United States; light duty detergents such as "Breeze", "Vel", "Dreft", etc., cost about 10 to 15 per cent more in Canada than their counterparts in the United States. Straight soap product prices are about equal in both countries.

Like the United States, Canada has been through a mild recession. One of its effects has been the use of certain sales stimulants, such as spoons, chinaware, and dishcloths included as premiums in detergent packages and a 10 cent discount on the purchase of two packages at one time.

GLYCERINE lye treatment is one of the major soap plant operations which lends itself to advantageous conversion from batch to continuous processing. Twitchell sweet water (12 per cent glycerine and two per cent acid) can be treated by two continuous washing filters at the rate of 40,000 pounds a day in one third of the time and with one third of the direct labor required by a batch process at the same rate of flow. The outlines of such an installation were described in last month's column. We shall now examine the mechanical setup in a more detailed fashion.

A batch installation capable of handling the process described above in nine hours would consist of three treatment tanks each measuring about 10 feet in diameter by 15 feet in height; and three presses and two transfer pumps occupying a filtering area of about 60 square feet. In addition there would have to be storage space and handling facilities for lime and soda ash. Total floor space required would add up to approximately 2,000 square feet. Installed cost of the equipment is estimated at about $18,000.

A continuous installation capable of handling the same 40,000 pounds of lye in three hours would call for the following pieces of equipment: two water washing continuous filters; two make-up tanks for sal soda solution and lime slurry; a small steam heated reactor, four by four feet; two proportioning pumps; and a control board incorporating a pH meter.

Table I. Data based on 40,000 pounds of lye

	Continuous	Batch
Steam	4000 lbs.	5600 lbs.
Electric energy	12 KW/hr.	10 KW/hrs.
Water	150 gal.	—
Direct labor	3 man hours	11 man hrs.
Loss of glycerine	20 lbs.	70 lbs.
Floor space	700 sq. ft.	2000 sq. ft.

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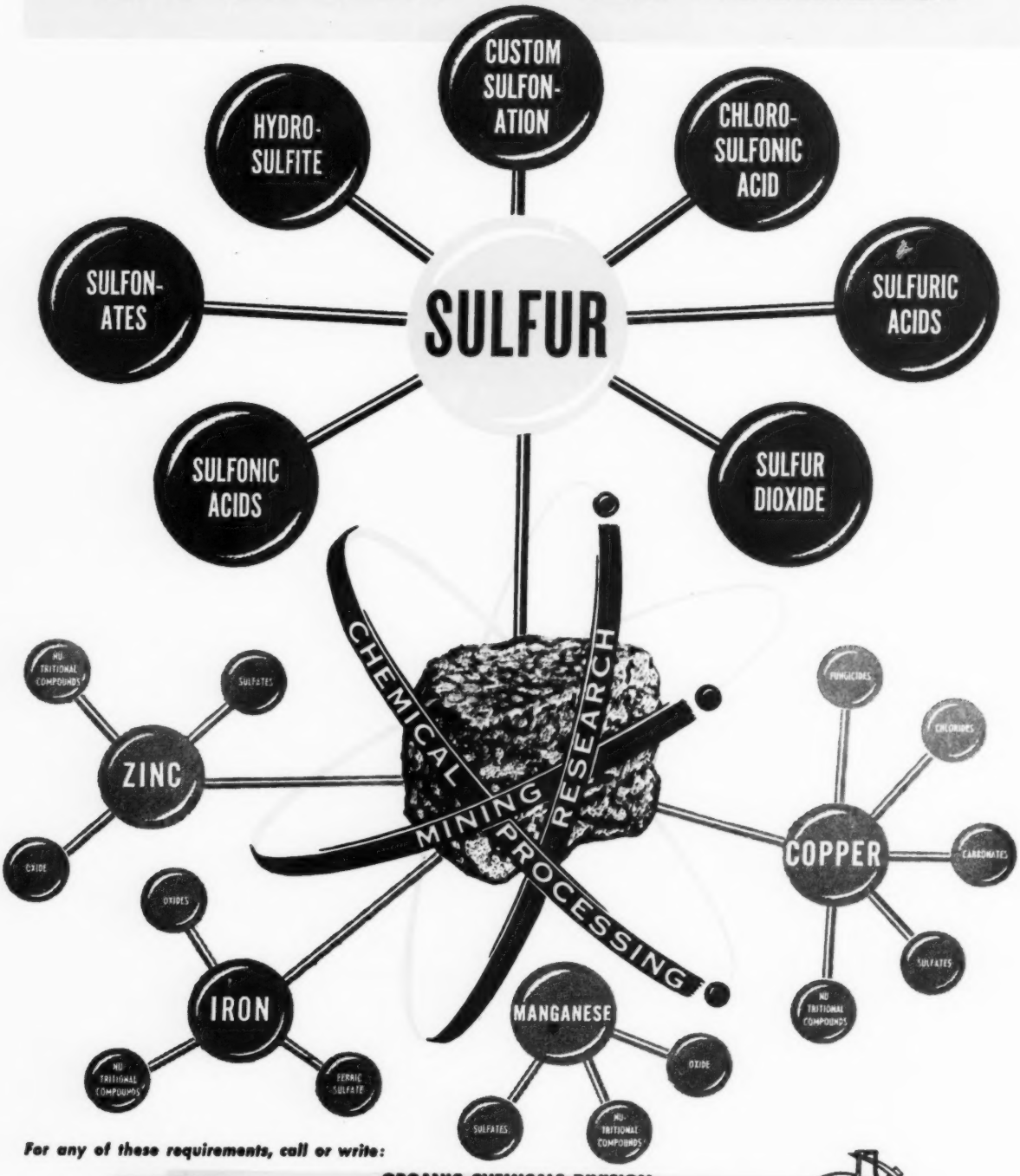


For any of these requirements, call or write:

ORGANIC CHEMICALS DIVISION

TENNESSEE CORPORATION

617-629 Grant Building, Atlanta 3, Georgia

pH controller, two flow meters, and a temperature regulator. This installation would occupy approximately 700 square feet and its erected cost is estimated at $20,000.

Table I gives some comparative data on the requirements of continuous and batch processing of glycerine lye.

Advantages can't be assessed on a general basis but must be evaluated with the individual conditions in mind. For instance, in some locations the saving of floor space may mean nothing, as it may be readily and abundantly available. Conversely, in a congested region, say in a metropolitan area, the saving of floor space could mean more than the entire cost capitalization of a new installation.

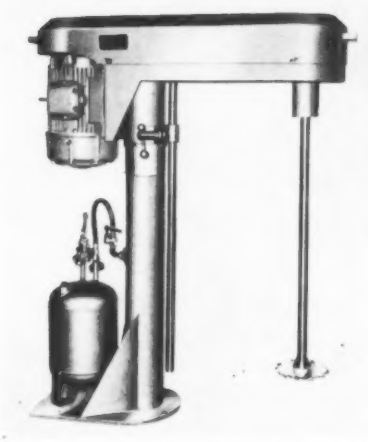
The most attractive and evident economies effected by converting glycerine lye treatment from batch to continuous operation are doubtless the savings in direct labor. Placing wages at $2.00 an hour, savings amount to 0.33 cents per pound of glycerine recovered. Reduction of glycerine loss, as shown in table I, adds another 0.30 cents per pound saving, calculated on a glycerine price of 30 cents a pound. This means that installation of a continuous process utilizing continuous filtration with automatic controls can reduce per pound cost of glycerine recovery by at least 0.63 cents per pound.

—★—

New Cowles Dissolver

A new "Cowles Dissolver" for high speed mixing of batches from 50 to 200 gallons and requiring only seven square feet of floor space was introduced last month by Cowles Dissolver Co., Cayuga, N. Y. Model "510-VH" permits application of 7½, 10 or 15 H.P. to disperse, dissolve, emulsify and deagglomerate solid/liquid, liquid/liquid, or gas/liquid materials of up to 50,000 centipoises.

While in operation, the assembly can be raised by hydraulic lift from a minimum height of 69½ inches to a maximum of 111½ inches. The impeller can center in



a tank, up to 68 inches in diameter.

Shaft speeds of 890, 1135, 1509, 1750 and 2040 r.p.m. are said to be rapidly attained by use of interchangeable sheaves on the V-belt drive. A selection of impellers is available for various applications. The bridge of the unit is constructed to swing in 180° arc and may be locked in any lateral position or height. The unit without motor weighs about 700 pounds.

Nonionics' Applications

(*From Page* 171)

tions) *Manufacturing Chemist,* June 1958, pp. 237-8. The addition of an anionic also raises the cloud point of a solution of an nonionic. A formula for a liquid dishwashing compound might be:

"Tergitol" (Carbide) Nonionic NPX	5
Alkyl aryl sulfonate	45
Lauric diethanolamide	10
Ethanol	15
Water and perfume	25

Nonionics may be incorporated into detergent powders together with phosphates and silicates. Low foaming heavy duty liquid detergents designed for use in automatic washing machines usually include among their active ingredients nonionics such as the "Pluronics" (Wyandotte) or tall oil ethylene oxide derivatives.

Combined with cationics, nonionics are the principal cleansers in detergent-sanitizer formulations. In metal and glass cleaning, nonionics are said to be most efficient. The tarnish removal power of silver polishes is enhanced by the presence of a nonionic surfactant. A typical formulation might include:

Nonionic	6.5
Polygylcol 400	4.0
Ammonium carbonate	2.6
Soap	1.5

Nonionics form addition compounds with phenols, sodium phosphate and iodine, which may be used in the production of iodophors. A sanitizer formulation incorporating an iodophor is suggested:

Iodophor	17.5
Nonionic	5.0
Phosphoric acid	10.0
Water	67.5

Solubility of nonionics in aromatic solvents is utilized in the preparation of insecticide emulsions. A concentrate of 25 parts DDT, five parts nonionic emulsifier, and 70 parts solvent, such as xylene, can be diluted with water to produce a stable emulsion.

Sucrose esters are non-toxic hydrophilic nonionic emulsifiers. Cosmetic formulations for creams and lotions may utilize sucrose esters in the aqueous phase and "Spans" (Atlas) in the oil phase. An example of a silicone-based sun-screen lotion is the following:

A. Butyl stearate	10
"Span" 60	2
Isopropyl p-aminobenzoate	1.5
D.C. 555 silicone oil	2.0
B. Sucrose palmitate	2.5
Methyl paraben	0.2
Water	81.8

Each mixture is heated to 75°C, and the aqueous phase, B, is added with stirring to A, the oil phase.

Perfumes may be solubilized in aqueous solutions by nonionics. For a C_{16} alcohol derivative the most suitable nonionic surfactant has an average ethylene oxide content between 15 and 25 mole per mole alcohol.

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Think of naptha (or naphtha) and you probably think of Fels and Company's famous line of NAPTHA SOAP PRODUCTS. However, naphtha is also used in many other industries: as a solvent in processing rubber and in the manufacturing of varnishes, lacquers, stains and inks; in compounding household cleaners and polishes. It's employed in the dry cleaning industry, in insecticides and asphalt liquefiers.

Atlantic naphtha is available for shipment by tank car, tank truck or drums—whichever is most convenient for your operation. Our naphtha is manufactured to your own specifications and standards.

Atlantic's technical representatives are always available to discuss any problems you may have in connection with efficient utilization of naphtha. We invite your inquiries.

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UCC's Annual Facts Book

The 1958 edition of an illustrated brochure entitled "Editor's Facts Book" has just become available from Union Carbide Corp., 30 East 42nd Street, New York 17. The publication incorporates an editor's facts sheet, product listings, products and process booklet and the company's annual report. The products and process section bears outstanding pictures illustrating the processes of manufacture which are part of Carbide's manifold operations and equally telling pictures showing industrial end uses of the firm's products as well as what happens to consumer products when they reach their final destination.

—★—

Low Cost Ultrasonic Cleaner

Production size ultrasonic cleaners and chemical process machines, said to be the first mass produced line of such equipment in America, were introduced recently by Narda Ultrasonics Corp., Mineola, L. I., N. Y. "Narda SonBlaster" systems cost from $345 up and are claimed to be the lowest cost ultrasonic equipment offered to American industry. Designated series 600, the line comprises 13 different systems made up of various combinations of generator and transducer models. Tanks range from one half to one gallon capacity with single or double tank compartments.

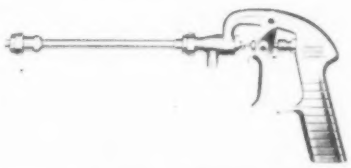
—★—

New Drip-Proof Spray Gun

A new drip-proof spray gun for spraying chemicals where leakage from the gun extension is undesirable, has been introduced by Spraying Systems Co., 3217 Randolph St., Bellwood, Ill.

Called "GunJet" 22-7676, the unit is designed with the shut-off valve immediately behind the nozzle tip which is claimed to provide a complete shut-off for both the gun and extension. Extensions are available in lengths of eight, 18, 24, 36, 48 inches. There is also a wide selection of orifice tips for different capacities and spray patterns.

"GunJet" operates with triggger action featuring a trigger lock for prolonged spraying operations.



Complete information on the product contained in data sheet 7676, is available from the company.

—★—

Vibrating Conveyor Data

"A Guide to Proper Selection of Vibrating Conveyors for Bulk Materials" is the title of a 16-page illustrated manual recently published by Ajax Flexible Coupling Co., Westfield, N.Y. Ajax makes vibrating conveyors, feeders, screens, and packers. The booklet gives information on materials handling operations which may be performed while conveying bulk materials. These include, among others, reduction of large agglomerates to particle size, cooling, and aligning and orienting of fragile containers.

—★—

Fine Organics Bulletin

A bulletin on "The Cleaning of Electric Motors" became available late last month from Fine Organics, Inc., 211 East 19th Street, New York 3. The firm makes "F.O.-128" cleaning and degreasing agent for electric motors, generators, contact points, etc. The product is a blend of petroleum and chlorinated solvents. In addition to treating electric plants, the solvent is suggested also for use on bearings, and other finely finished metal surfaces. "F.O.-128" is part of Fine Organics' line of "Safe-TEE" solvents. It is said to combine desirable toxicological and dermal properties with a high flash point. It may be used as a dip or spray.

The bulletin supplies information on solvent selection, on procedures for cleaning electrical plant, on safety and on other pertinent aspects.

Oronite Technical Brochure

"Mechanism of Cotton Detergency" is the title of a new 16-page technical booklet available from Oronite Chemical Co., 200 Bush Street, San Francisco 20. Factors involved in cotton detergency are analyzed in this brochure, including soils, the soil/fabric complex, and the role of surfactants and builders in the cleaning process.

—★—

Chlorine Compounds Data

A new 45 page illustrated brochure describing 11 organic chlorine compounds has just become available from Union Carbide Chemicals Co., 30 East 42nd Street, New York 17. The booklet describes physical and physiological properties, supplies information on uses, shipping, handling and storage of the chlorine compounds and some of their derivatives.

—★—

Antara Technical Data

A brochure listing 11 high pressure acetylene derivatives, their structures, physical forms, properties, and applications became available last month from Antara Chemical, a Sales Division of General Aniline & Film Corp., 435 Hudson Street, New York 14. The list includes various grades of PVP, suggested for use in detergents and soaps, and in waxes and polishes; and vinylpyrrolidone/vinyl acetate copolymers, intended for sprayable products such as hair fixatives and liquid bandages. A combination of PVP and iodine is described as an effective fungicide, virucide, and bactericide, effective against some insects, and adaptable to spray formulation. A number of the products may be used as solvents for insecticides and as corrosion inhibitors.

At the same time Antara published a 25-page booklet giving detailed information on the properties and applications of vinylpyrrolidone (n-vinyl-2-pyrrolidone). Copolymerization with other vinyl monomers is described and industrial applications of copolymerization products are given.

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News...

PEOPLE · PRODUCTS · PLANTS

Drackett Acquires Dunaway

* * *

Babbitt First Half Profit

* * *

Polzer Ultra Vice-President

* * *

Sheppard Joins Magee Chem.

Lawrence L. Moore, advanced to assistant sales manager of Dumas Milner Corp., Jackson, Miss. ("Pine Sol" and "Perma Starch"), was formerly advertising and sales promotion manager. See page 183 for full details.

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News

Peck Heads Nat'l Labs

M. E. Peck has been elected president and director of National Laboratories, Inc., Toledo, O., a

M. E. Peck

subsidiary of Lehn and Fink Products Corp., New York, it was announced last month by Dr. Edward Plaut, president of Lehn and Fink.

Mr. Peck, formerly executive vice-president of National, succeeds Lisle C. Van Nest, founder of the firm, who is retiring after 23 years and continues as a member of the board of directors.

Previously Mr. Peck was president of the Spirella Co., Niagara Falls, N. Y., and its Canadian counterpart, before joining National last June. Prior to that he was associated with the Hoover Co., North Canton, O., for 24 years.

Mr. Van Nest founded National, a producer of sanitation chemical products, in 1935. Lehn and Fink acquired the company in the fall of 1957.

★

Drackett To Purchase Firm

Directors of Drackett Co., Cincinnati, last month approved an agreement to purchase Judson Dunaway Corp., Dover, N. H. Payment will be made in Drackett common stock.

Drackett manufactures "Drano" drain cleaner, and "Windex" glass cleaner, as well as copper cleaners at its Ohio and California plants. Judson Dunaway makes insecticides and cleaners in the United States and Canada.

★

Peck's Products Expands

To enlarge its capacity for specialized blending and compounding on a contract basis, Peck's Products Co., St. Louis, recently added 20,000 square feet of floor space to its plant in that city. The unit now contains a total of 130,000 square feet.

The addition to the plant houses equipment designed to mix and package dry compounds at the rate of 250,000 pounds per day. Packaging of these materials will be available in five-pound boxes, 25-pound pails, 100- and 125 pound kegs, 100-pound bags, and 300-pound barrels, according to the company.

★

Ward Glasby Retires

Ward Glasby, west coast manager for Fuld Brothers, Inc., Baltimore, recently announced his retirement. Mr. Glasby has been associated with the firm for more than 12 years, first as assistant sales manager at Baltimore, and later as general manager of Fuld's Los Angeles plant.

★

In New Lehn & Fink Post

Randall Mathews has been appointed to the new position of assistant brand manager for "Lysol" disinfectant and "Hinds Honey and Almond Fragrance Cream" of Lehn and Fink Products Corp., New York, it was announced last month by Emanuel Goren, manager of the proprietaries and toiletries division.

Mr. Mathews joined the firm in 1956 and has been regional manager since April, 1957. In his new post he is assisting Victor A. Pizzolato, brand manager.

Dumas Milner Names Two

Lawrence L. Moore was advanced recently to assistant sales manager by the Dumas Milner

Lawrence Davis

Corp., Jackson, Miss., manufacturers of "Pine-Sol" and "Perma Starch" household specialties. The firm also announced that Larry Davis has joined the company as advertising and sales promotion manager with duties that were formerly handled by Mr. Moore.

Previously Mr. Davis was associated with Hill Packing Co., Topeka, Kans., and Nehi Corp., soft drink concern.

Mr. Moore, who joined Dumas Miller early this year, is working directly under the supervision of R. E. Schuler, vice-president—sales. He was formerly with Pabst Brewing Co. and Hoffman Beverage Co.

★

Wallace Erdmann Dies

Wallace H. Erdmann, 65, former director of purchases for Colgate-Palmolive Co., New York, died of a heart ailment last month in a Louisville, Ky., hospital. He retired from Colgate six years ago.

Mr. Erdmann was assistant purchasing agent for the old Palmolive Co., Milwaukee, for approximately ten years before the firm moved in 1934.

YOUR TURN TO CALL THE TUNE

A turn to Orbis has brought lasting success to many a manufacturer. You, too, will find it pays never to skimp in any scents—always to rely on Orbis odors of great quality and uniform economy.

While you're playing for money, play for keeps. See if an Orbis odor doesn't satisfy your demand for good profits from good products.

For instance: Sample these scents today. Write on your letterhead and we'll send, too, the Orbis catalogue of fine products.

Series No. 300 Orbis Odors

Bouquet CH
Bouquet TB
Bouquet Kashmiri
Carnation
Chypre
Cologne
Divinia
Florida
Gardenia
Heliotrope
Honeysuckle
Jasmin
Jockey Club
Lavender
Lilac
Millefleurs
Muguet
Narcisse
New Mown Hay
Rose
Sweet Pea
Violet
Wistaria

Always at these low Orbis prices:

25 and 50 lb. cans ..... $3.00 per lb.
5 lb. bottles ..... 3.15 per lb.
Trial Pounds ..... 3.25 per lb.

Series No. 600 Orbis Odors

Bouquet CH
Bouquet de Oriente
Bouquet Kashmiri
Bouquet Parisienne
Bouquet TB
Carnation
Chypre
Cologne
Corylopsis
Crechene
Cuir de Russie
Divinia
Florida
Gardenia
Heliotrope
Honeysuckle
Jasmin
Jockey Club
Lavender
Lilac
Magnolia
Millefleurs
Muguet
Narcisse
Neroli
New Mown Hay
Oriental
Rose
Sweet Pea
Violet
Wistaria

Always at these low Orbis prices:

25 lb. cans and 50 lb. cans ..... $6.00 per lb.
5 lb. bottles ..... 6.15 per lb.
Trial Pounds ..... 6.25 per lb.

Other Orbis Products

Essential Oils
Perfume Bases
Fruit Flavors
Oleoresins
Aromatic Chemicals
Cosmetic Raw Materials
Water Soluble Gums

ORBIS
PRODUCTS CORPORATION
601 W. 26th STREET
NEW YORK
WAtkins 4-7660

BANK ON ORBIS SCENTS AND SAVE DOLLARS

Avmor Appoints Grimes

The appointment of Harry Grimes as southern Quebec sales representative was announced in

Harry Grimes

mid-August by Avmor, Ltd., Montreal, Canada, sanitation chemical manufacturers. Mr. Grimes will assist customers with their problems in maintenance procedure, materials and programming.

Avmor manulactures a complete line of maintenance and sanitary supplies including heavy duty waxes, detergents, para blocks and surface active agents.

★

AMA Honors Deupree

Richard R. Deupree, chairman of the board of Procter & Gamble Co., Cincinnati, has been selected to receive the Henry Laurence Gantt Gold Medal for "distinguished achievement in industrial management as a service to the community."

The award will be presented under the joint auspices of the American Management Association and the American Society of Mechanical Engineers at a luncheon concluding the AMA's fall personnel conference at New York's Statler Hotel Sept. 24.

Lawrence A. Appley, AMA president, will serve as luncheon chairman and Henning W. Prentis, Jr., chairman of the board of Armstrong Cork Co. and 1956 recipient of the medal, will introduce Mr. Deupree.

The Procter & Gamble chairman was cited by the Board of Award as " a man who has infused in his own company the continuing recognition that the interests of a company and its employees are inseparable; one who has proved the value of this philosophy as he has guided his company through its greatest growth period; and one who has sought diligently to foster such a philosophy throughout American industry."

With Procter & Gamble since 1905 and chairman since 1948, Mr. Deupree has been active in public affairs and business, professional and philanthropic organizations.

The Gantt Medal, awarded annually by the AMA and ASME, was established in 1929 in memory of the late Henry Laurence Gantt, management engineer, industrial leader, and humanitarian.

★

Klarmann CSMA Rep.

Dr. Emil G. Klarmann of Lehn & Fink Products, Inc., New York, acted as official delegate of the Chemical Specialties Manufacturers Association to the conference on staphylococcal disease held at the Communicable Disease Center of the U.S. Public Health Service in Atlanta, Ga., September 15-17. The conference was called by Dr. Leroy E. Burney, Surgeon General, on a recommendation of the American Hospital Association. About fifty persons from hospital, medical and other professional groups attended.

The chief purpose of the conference was to establish control measures for use by hospitals and communities to deal with the acute problem of infections caused by bacteria resistant to penicillin and other antibiotic drugs. A prime concern of the conference was a discussion of more effective disinfectants and germicides for hospital use. Dr. Klarmann attended the conference as delegate representing disinfectant and germicide manufacturing interests. A report on discussions at the conference will be published in a later issue.

Hunnisett In New Plant

H. S. Hunnisett, Ltd., manufacturer and distributors of sanitary products, equipment, and paper goods, has announced the opening of its new quarters at 200 Wicksteed Ave., Toronto 17, Canada. The firm was previously located at 11-25 Jarvis St., Toronto. The firm's new telephone number is Hudson 7-3691.

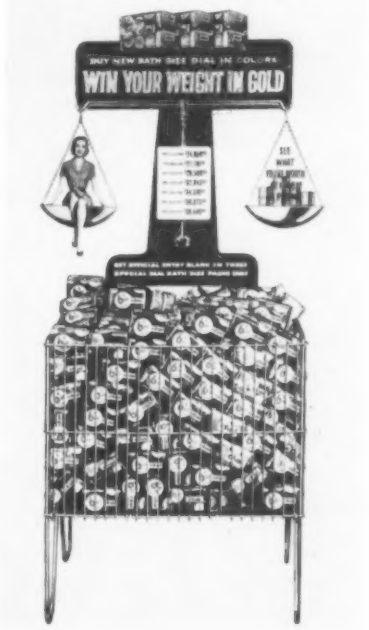
★

New "Dial" Promotion

A new consumer contest called "Win Your Weight in Gold" using a special "six-cents off deal pack" which contains two bath-size bars of "Dial" soap and a contest entry blank is being introduced by Armour and Co., Chicago. Contestants have a chance to win their weight in 10-karat gold valued at $246.50 per pound. Featured in the pack is "Dial" soap in pink, gold, and aqua colors.

The contest will be promoted in national magazines, Sunday comic sections, and a nationwide television show. Point of sale material is being offered to dealers who tie into the promotion.

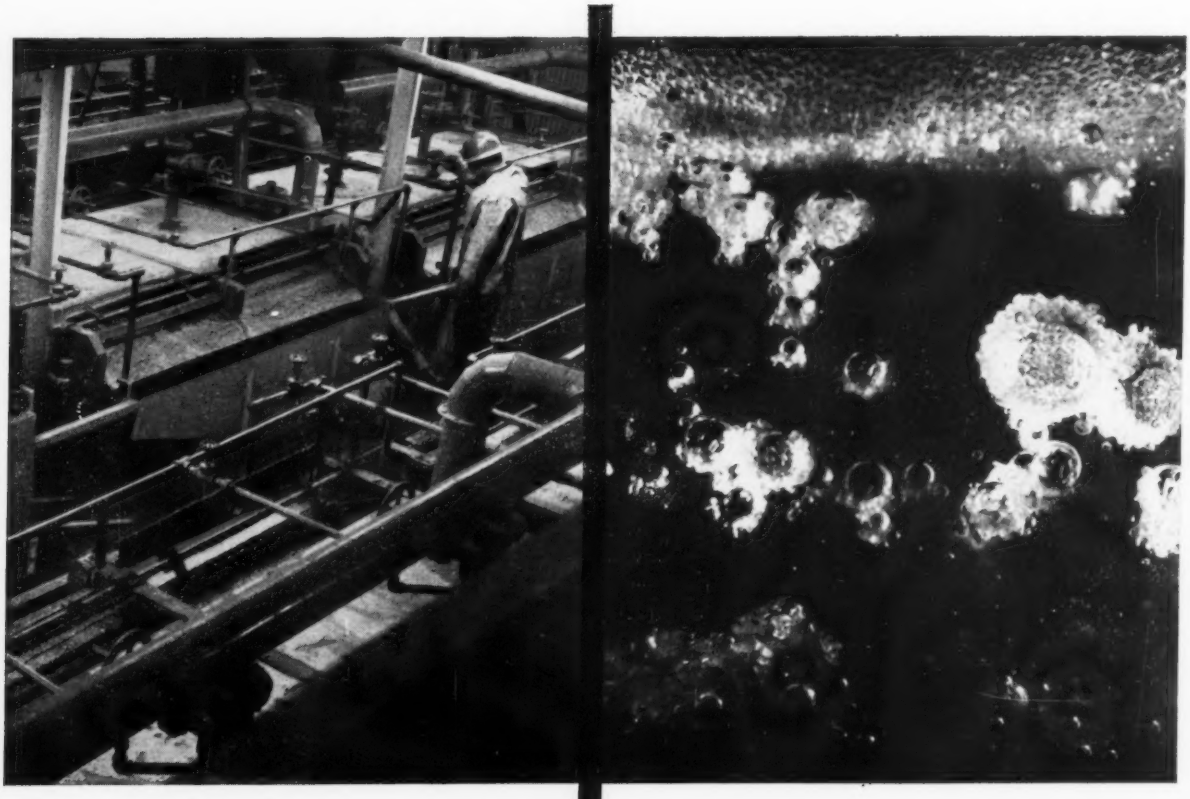
Colorful display material being offered dealers who tie into new "Dial" Soap "Win Your Weight in Gold" contest sponsored by Armour and Company. Contestants must buy special "6¢ off" deal pack for official entry blank. Winner will be paid $246.50 a pound.



Pamak, Hercules Distilled Tall Oil Fatty Acids, offers a low-cost, dependable source of high-quality Oleic-linoleic Acids for flotation

Pamak is now being used successfully as a collector in the beneficiation of such minerals as barytes, feldspar, fluorspar, hematite, hydrous magnesium oxide ores, kyanite, phosphate rock, and spodumene.

Hercules' flotation laboratory and field service are at your disposal to determine how Pamak, the low-cost, dependable, high-quality collector, can benefit you. Write for further information.



PAMAK® TALL OIL FATTY ACIDS

Industrial Chemicals Division
Paper Makers Chemical Department
HERCULES POWDER COMPANY
INCORPORATED
Wilmington 99, Delaware

Velsicol Appoints Kramer

Robert J. Kramer has been appointed to the advertising staff of Velsicol Chemical Corp., Chicago, it was announced last month by L. E. Carls, advertising manager.

Robert J. Kramer

In his new post Mr. Kramer, who joined the firm in 1952, is assisting in the company's advertising and sales promotion activities.

★

Harris Joins Finetex

Clarence P. Harris has joined Finetex, Inc., East Paterson, N. J., manufacturing chemists, as research director. The firm manufactures textile and leather chemical specialties.

Dr. Harris previously was associated with E. I. du Pont de Nemours & Co., and most recently, Apex Chemical Co.

★

Oil Specialties Expands

The complete revamping and expansion of its production and packaging facilities was announced late in August by Oil Specialties & Refining Co., Brooklyn. In addition to the installation of new production and packaging equipment, Oil Specialties has acquired an additional 18,000 square feet of floor space in a building adjacent to its headquarters at 18 Bridge St., Brooklyn. This space was formerly leased to another firm. With this additional floor space the firm's total is now 50,000 square feet.

Expansion of its facilities for the production of "Safite" floor finish and maintainer, as well as other floor waxes and polishes and disinfectants, was necessitated by increased sales of these products, according to Robert Crockett, marketing vice-president of the firm, which is headed by Joseph Green.

★

Armour Appoints Benson

Rex S. Benson was advanced recently to east central regional manager of the household soap department of Armour and Co., Chicago. Walter H. Hopkins succeeds him as Detroit district sales manager.

★

American Home Net Up

American Home Products Corp., New York, and its subsidiaries have reported a net income after taxes of $21,028,631 for the six months period ending June 30, compared with $19,119,358 for the same period in 1957. Earnings per share amounted to $2.74 in 1958, compared with $2.49 in 1957, the latter figure being adjusted for the two-for-one stock split in 1957.

Net income for the March quarter of this year was $10,455,559 or $1.36 a share, against $9,431,170, or $1.23 a share in the March quarter of 1957.

Sinclair Changes Address

The street number of the Sinclair Refining Co., Harvey, Ill., has been changed from 400 East Sibley Blvd. to 410 East Sibley Blvd., according to N. J. Gothard, chief chemist. The telephone numbers of the firm have also been changed to a Chicago exchange, INterocean 8-5420, and the local number to EDison 3-6700.

★

Travelers Aid Chmn.

Ralph A. Hart, executive vice-president of Colgate-Palmolive Co., New York, is serving as chairman of the soap division in the 1958 appeal for funds by Travelers Aid Society of New York. The 53rd annual appeal by the society began Sept. 15th and ends Dec. 31st.

★

D&O Moves Office

The Philadelphia sales office of Dodge & Olcott, Inc., New York, has been moved to the 69th St., Theater Building, Garrett Rd. and Westchester Pike, Upper Darby, Pa. The change was made Sept. 1st.

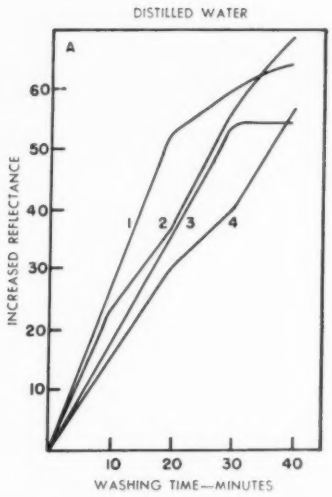
For the past 40 years the office was located at 503 Arch St., Philadelphia. The branch is under the direction of Matthew J. Phelan.

Steffen Arctander, second from left, internationally known chemist, perfumer and author, and presently associated with the research department, essential oil and perfume division of Colgate-Palmolive Co., New York, was guest speaker, at the August 7th CIBS luncheon. Shown with Mr. Arctander, following his talk at Toots Shor's, New York are, left to right, George Kaempkes of Pacquin, Inc., a CIBS' director; William Jaeger, Park and Tilford, CIBS' president and Harry A. Cowperthwaite, T. C. Wheaton Co., chairman of CIBS' auditing committee. In his talk, Mr. Arctander stressed the essentiality of essential oils. His talk, "A Safari thru Africa", dealt with his most recent trip across that continent to visit essential oil growers and producers and to seek new types of essential oils. A highlight of his trip was a trek of 2000 miles across the Sahara Desert by car and alone. A photographer and lecturer of note, Mr. Arctander served as an instructor in high explosives and incendiary bombs for the British Intelligence Service in Denmark during World War II.

WORKING ON A LIQUID DETERGENT?

Here's a choice of Kasil Potassium Silicates to improve cleansing power. Kasil Potassium Silicates have good detergent action—you can increase sudsing and improve soil suspension properties. The chart is based on a study to measure the speed and efficiency of potassium silicates in removing soil.

If you need a sodium-free silicate, let us suggest a Kasil for your own experiments. One of Kasil Potassium Silicates can fit your formulas for a liquid detergent or a semi-paste soap.



Removal of graphite soil at 60° C. with 0.65% detergent consisting of 80% potash soap and 20% of a builder. (1) Kasil #1, (2) Kasil #6, (3) potassium carbonate, (4) soap alone.

PQ SOLUBLE SILICATES

PHILADELPHIA QUARTZ COMPANY

1152 Public Ledger Building, Philadelphia 6, Pa.

Associates: *Philadelphia Quartz Co. of Calif. Berkeley & Los Angeles, Calif., Tacoma, Wash.; National Silicates Limited, Toronto, Canada*
Distributors in over 65 cities

TRADEMARKS REG. U.S. PAT. OFF.

PQ WORKS: ANDERSON, IND., BALTIMORE, MD., BUFFALO, N. Y. CHESTER, PA., JEFFERSONVILLE, IND., KANSAS CITY, KANS., RAHWAY, N. J., ST. LOUIS, MO., UTICA, ILL.

Polzer Ultra V. P.

George F. Polzer has been elected executive vice-president and director of Ultra Chemical Works,

George F. Polzer

Inc., Paterson, N.J., a division of Witco Chemical Co., New York, it was announced last month by Henry Ruegg, Ultra president.

Previously Mr. Polzer was director of purchases for Witco and its division, a post he has held since he joined the company last year. Prior to joining Wito he had been with the purchasing department of American Cyanamid Co. for a number of years. In his new post he succeeds A. Sharphouse who with Fred Buck has left Ultra.

★

Charles Berger Dies

Charles Berger, 60, staff perfumer of Fleuroma, Inc., New York, perfume and aromatic chemical manufacturers, died early last month after a brief illness.

Mr. Berger had been with the firm for four years and was previously chief perfumer with Felton Chemical Co. He was a member of the American Society of Perfumers.

Mr. Berger is survived by his wife and three daughters.

★

Soap Meeting Proceedings

The proceedings of the 31st annual convention of the Association of American Soap and Glycerine Producers, Inc., have just been published. The convention was held Jan. 22-24, 1958, at the Waldorf Astoria Hotel, New York. Copies are available free to registrants at the meeting and are for sale to members at $5.00 each, to non-members at $10.00. To obtain copies contact the association's offices at 295 Madison Ave., New York 17.

★

In Economics Shift

Thomas Hernandez has been appointed sales manager of Soilax de Mexico, Mexico City, a recently organized subsidiary of Economics Laboratory of Canada, Ltd., Toronto, it was announced last month by E. B. Osborn, president of the parent company, Economics Laboratory Inc., St. Paul, Minn.

The company is promoting in the Mexican market its products including "Super Soilax," "Express," and "Rinse Dry," equipment which is most suitable for their application.

Prior to his recent appointment Mr. Hernandez was on the executive staff of the company's institutional division with headquarters in New York.

Wilkins Co., Cortland, N. Y., recently adopted a new plastic squeeze bottle for packaging its "K-Lens-M" lens cleaner. The bottle is spill-proof and is equipped with a hinged snap cap. "K-Lens-M" may be used for cleaning both glass and plastic surfaces without filming or streaking, according to the manufacturer.

CSC Names Guill

Albert P. Guill has been named eastern field representative for the market development de-

Albert P. Guill

partment of Commercial Solvents Corp., New York, it was announced last month by Frank E. Dolian, department manager.

Mr. Guill will be concerned with the development of new markets for the company's line of industrial, agricultural, and automotive chemicals as well as animal nutrition products in Washington, Oregon, Idaho, California, Nevada, Arizona, and Utah. He will make his headquarters at the firm's district office in Los Angeles.

★

New Stauffer Borax

A new free-flowing grade of borax, designed for use in powdered hand soaps, is being produced by Stauffer Chemical Co., New York. The new grade, said to be unusually white in color and virtually dust-free, is reported to be made through the use of a new manufacturing process and incorporation of a special additive to the borax.

An optimum mesh size composition has been established to meet the requirements of hand soap formulators. A typical analysis is: on 40 mesh, trace; on 60 mesh, 10 per cent; on 140 mesh, 82.6 per cent; and on 200 mesh, 93 per cent.

The new grade of borax is shipped in five-ply paper bags of 100 pounds or in bulk hopper cars.

PACING THE FLOOR WON'T LIGHTEN YOUR BURDENS!

BUT here is something that can! *Turn over to FRITZSCHE those matters that pertain to your product's fragrance.* This will put your perfume problems right where they belong—in the hands of odor specialists—not just one, but a whole staff of experts, each a master of some phase of creative perfuming. They will bring to the focal point of your problem the necessary skill and experience. This complete service is yours without obligation or cost. Should we arrive at a solution *satisfactory to you*, you will have the further assurance that every order delivered for your account will be of guaranteed uniformity in absolute accord with the formulations developed for your product. Why not put fragrance worries completely out of your mind?... Let FRITZSCHE do the worrying for you!

FRITZSCHE *Established* 1871 *Brothers, Inc.*

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* *STOCKS: *Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania. San Francisco, California, St. Louis, Missouri, Montreal and *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.

—*ALWAYS DEPENDABLE*—

ODORANTS and DEODORANTS for INDUSTRIAL and TECHNICAL USE

▲

MADE-TO-ORDER FRAGRANCES for PERFUMES, TOILETRIES and COSMETICS

▲

SUPPLIERS of ESSENTIAL OILS, AROMATIC CHEMICALS, BASIC PERFUME and FLAVOR RAW MATERIALS

Emery Appoints Two

Lee F. Church has been appointed to the newly created position of controller, and Robert R. Behrmann has been named director of purchases and traffic of Emery Industries, Inc., Cincinnati, it was announced last month by A. W. Schubert, executive vice-president.

Mr. Church has been with Emery since 1948 as director of market research. In his new position he directs market research, sales analysis, budget control, and cost accounting operations.

Mr. Behrmann joined the firm in 1948 and has been director of purchasing since 1954. In his new post he assumes the additional supervision of the company's traffic operation and all purchasing activities of the recently acquired Vopcolene division in Los Angeles.

—★—

New Esquire Polish

Introduction of "new-formula" Esquire Boot Polish will highlight an intensive fall advertising campaign to be launched Sept. 30 by Knomark Manufacturing Co., New York, a subsidiary of Revlon, Inc., according to Melvin Birnbaum, executive vice-president of Knomark. Media to be used in the campaign include a national network television show and two magazines with nation-wide circulation as well as trade publications.

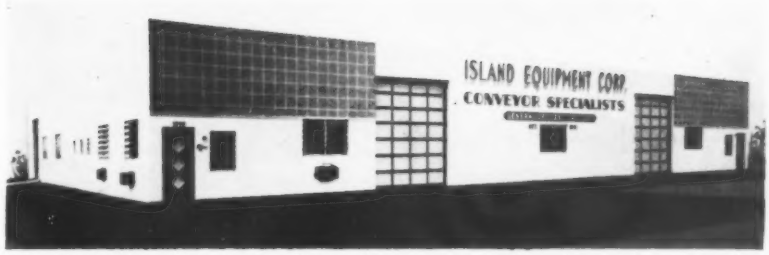
All major items in the "Scuff-Kote," and "Lanol-White" Esquire line including "Lano-Wax" will be promoted in the campaign. At the same time the company reports it will increase advertising for these products in national magazines and leading newspapers in Canada.

—★—

Rexall Purchases Chemtrol

Purchase of Chemtrol Co., Lynwood, Cal., manufacturer of plastic non-corrosive valves, by Rexall Drug Co., Los Angeles, was announced last month by Justin W. Dart, Rexall president.

Chemtrol is operated as a division by Rexall to complement the products of its Kraloy Plastic Pipe Co., Division. Martin Usab, designer of the valves and a principal of Chemtrol, heads a joint research and development dept.



New plant of Island Equipment Corp., conveyor and package line equipment maker, at Hialeah, Fla. Firm recently moved its plant and head office to Florida from Long Island City, N.Y. New building provides nearly 15,000 square feet of floor space. Island also has regional sales office at 135-20 39th St., Flushing, N.Y., for the northeastern territory. Nicholas W. Gross, sales vice-president, is in charge of the office. Island's sales activity in the remainder of the U.S. is conducted through jobbers and agents under the direction of John W. Stiles, president, and John W. Stiles, Jr., field manager.

Babbitt Shows Profit in First 1958 Half

B. T. Babbitt, Inc., New York, has reported a profit for the first six months of 1958 compared with a loss for the same period last year.

Marshall S. Lachner, president, announced that net sales to June 30 of this year were $9,584,318 and net profit after taxes was $510,786 or 5.3% of sales, exclusive of operations of foreign subsidiaries. Sales for the second quarter were 8% higher than in the first quarter of 1958 and net profit 121% higher. Net sales for the six months ending June 30, 1957 were $10,852,075 with a net loss after taxes of $608,030.

Earnings per share for the first six months of 1958 were 46 cents before the preferred requirements and 43 cents after preferred requirements applicable to the period. This compares with a loss per share for the first six months of 1957 of 58 cents per share before preferred requirements.

An adjustment of approximately $200,000 is to be charged against the earned surplus for a non-recurring loss sustained and anticipated on the disposal of the fixed assets and inventory of Connecticut Chemicals Research Corp., Bridgeport, Conn., a wholly owned subsidiary of Babbitt.

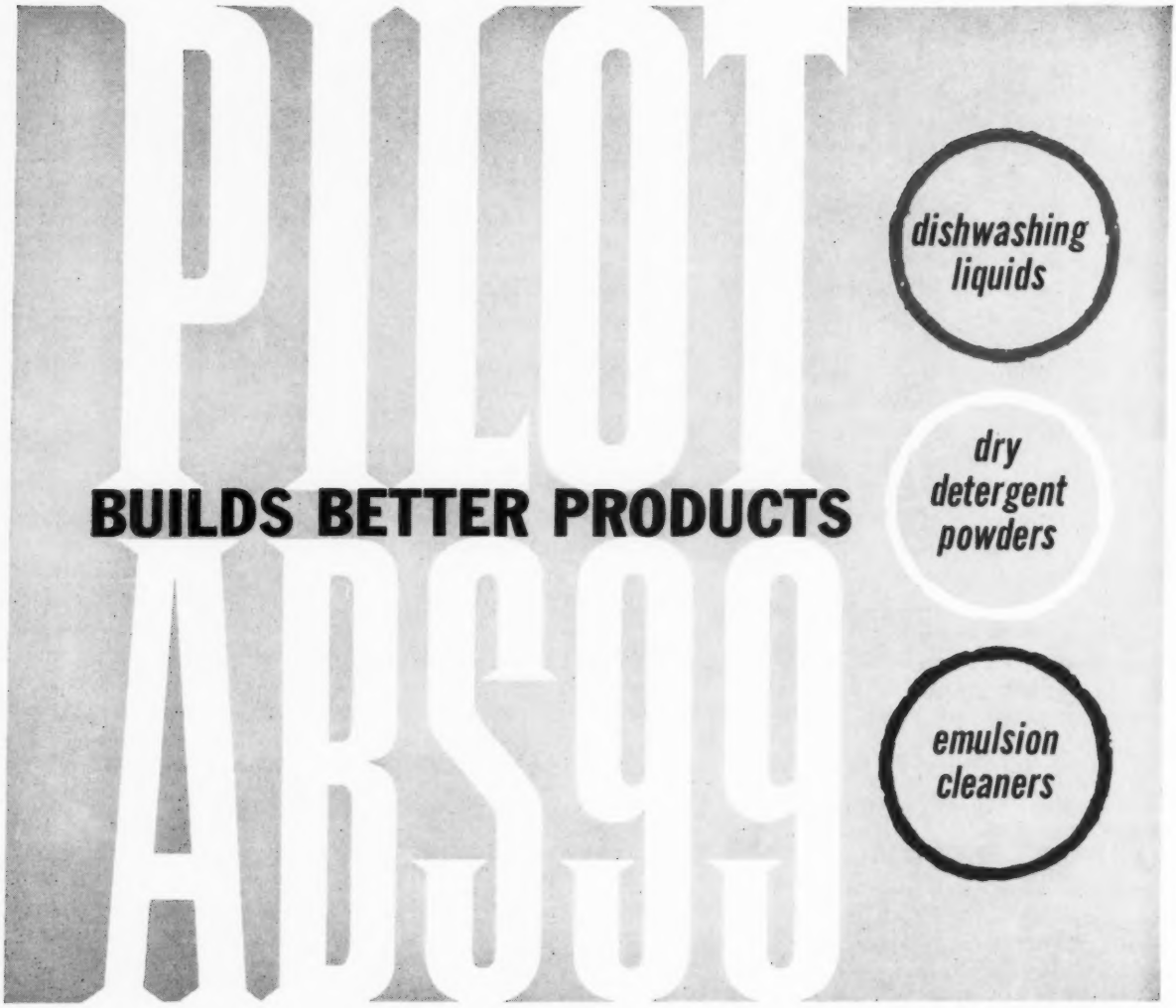
According to Mr. Lachner, the subsidiary's operations "resulted in a loss, which is reflected in the earnings stated above. Because it was a continuing loss operation we closed the plant and production of aerosol products will be handled by a leading contract manufacturer with whom we have concluded an agreement whereby these products will be manufactured for us to our own high quality standards."

Mr. Lachner pointed out that bank loans which stood at $1,500,000 on Jan. 1, 1958 have been reduced at a rate faster than anticipated and, as a result, totaled $500,000 as of July 25.

He credited a series of organization and policy changes as well as selling changes and price adjustments for the improvement in the firm's profit position.

In conclusion, Mr. Lachner said that the firm will be operating under normal conditions during the next six months and will not have to absorb losses such as those incurred during the reorganization period.

He also revealed that Philadelphia, Boston, and Detroit have signed an agreement with Babbitt similar to the one made with the New York Transit Authority. Presentations for an agreement of this kind have been made to eleven principal cities throughout the country.



PILOT ABS-99 builds better end products because ABS-99 *is* a better product to start with. ABS-99 *is* the highest dodecyl benzene sulfonic concentrate commercially available: 98% concentrated with extra activity—14% more active ingredient than ordinary 88% pure sulfonics.

ABS-99 is purer. *So pure, in fact, that it may be kept in plain steel containers!*

Pilot ABS-99 offers greater compatibility with oils and other organic substances; it prevents precipitation because of its low sulfate content, lowest of any similar material on the market.

The uniqueness of this new standard of purity is a result of Pilot's *cold processing:* built in are high detergency and foaming character—stabilized are its light color, viscosity and low odor. You'll save, additionally, on perfuming.

Pilot ABS-99 adds greater flexibility to your detergent formulations, for it is the basic building block for all sulfonic detergent products. So, for superior products—start with the best. Write for technical literature and samples right now.

LEADS THE WAY TO BETTER PRODUCTS
PILOT

PILOT *California Co.*

215 WEST 7th STREET • LOS ANGELES 14, CALIFORNIA

New Shulton Subsidiary

Shulton, Inc., New York, has announced the formation of its seventh foreign subsidiary, Shulton

James A. Hatton

Limitada, which will operate in Argentina. Operations and distribution facilities are expected to be set up before this year's Christmas selling season.

James A. Hatton, with Shulton since 1956, has been named manager of the Argentine branch.

★

New Lever Promotion

Lever Brothers Co., New York, has launched a promotional contest offering more than $500,000 worth of prizes. Called the "Price is Right" Family Contests, the promotion features twelve concurrent contests, each sponsored by a different Lever product.

A total of 150-million coupons, redeemable on the firm's products, and 360-million contest entry blanks are being mailed to more than 30-million homes. Begun Sept. 11th, the contest is being advertised on 17 national television shows.

★

Johnson Sets Sales Peak

The most successful sales year in the 72-year history of S. C. Johnson & Son, Inc., Racine, Wis., was reported last month by Howard M. Packard, president.

Mr. Packard said domestic household product sales were up more than four per cent in the fiscal year ended June 30, and that overseas subsidiaries' sales were up more than 13 per cent. A private corporation, the firm does not reveal sales and earnings figures.

Mr. Packard stated that the first half of the 1957-58 fiscal year had been "disappointing." The upturn, he said, began shortly after the first of this year with March and April successively the largest single sales months in the company's history. May and June maintained the upward trend.

★

BIMS Honors Two

BIMS of Boston honored two of its charter members at a golf outing early last month. Francis A. Longlois, retired from Rexall Drug Co., and Herbert A. Stephens, retired from U. S. Lithograph Co., and who served on the BIMS executive committee for many years, were inducted as honorary members of the organization.

Prize-winners at the outing included William Desmond, Red Cap Refresh'r; J. T. O'Keefe, Dow Chemical Co.; D. L. Bartholomew, Angier Chemical Co.; Ira Vanderwater, R. W. Greeff Co.; Don Bush, Enjay Co.; and Hart Harris, Jr., S. B. Penick & Co.

BIMS of Boston's next outing is set for Sept. 30th at the Nashua, N. H., Country Club.

★

Sells Propylene Oxide

Wyandotte Chemicals Corp., Wyandotte, Mich., announced last month its ability to sell to industrial consumers propylene oxide from its plant, which went on stream early this year and has now attained capacity production. The announcement was made by Bert Cremers, vice-president of the company and general manager of the Michigan Alkali division which operates the plant.

Propylene oxide and ethylene oxide, made by the firm at Geismar, La., are basic materials used captively in the manufacture of Wyandotte's "Pluronic" and "Tetronic" surface active agents and of polypropylene glycol "2000".

Goren Elected Club V.P.

Emanuel Goren, manager of the proprietaries and toiletries division of Lehn & Fink Corp., New

Emanuel Goren

York, recently was elected executive vice-president of the Merchandising Executives Club of New York. Mr. Goren formerly had served as recording secretary and as a director of the club. He has been with Lehn & Fink since 1952.

★

New NSSA Poster

A new maintenance training poster has just become available from the National Sanitary Supply Association, 159 N. Dearborn St., Chicago 1, Ill. Dusting polishing, and aseptic cleaning methods are illustrated on this 17 by 22 inch poster, which was prepared by NSSA on the basis of studies made by the Veterans Administration. A copy is available free of charge from the association or from local NSSA members.

★

Colgate Names Kearns

Lyman C. Kearns has been named supervisor of sales personnel in the Salt Lake district for Colgate-Palmolive Co., New York. The district includes parts of Nevada, Idaho, Wyoming and all of Utah.

Previously Mr. Kearns was a supermarket salesman with the firm. He joined Colgate four years ago and has held various sales positions.

Another new development using

B.F.Goodrich Chemical *raw materials*

As an excellent bulking agent and stabilizer

CARBOPOL® 934

helps relieve animal ailments

A whole family of veterinary products get both application and manufacturing advantages from Carbopol 934. Some are for external use, others internal, since Carbopol 934 can be administered orally to either humans or animals.

The manufacturer reports that Carbopol 934 is an excellent bulking agent, as well as a stabilizer in liquids containing two or more incompatible ingredients. In a lubricating jelly, it is superior to natural gums because with Carbopol 934 the jelly doesn't dry so rapidly on the skin. In addition, the small amounts of solids in the preparation leave very little residue on skin.

Carbopol 934 has also proved ideal as a thickening agent where minerals are incompatible with most of the natural gums. Carbopol 934 may be the answer to an improved product or application in your operations. For information, write Dept. RC-5, B.F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Good-rite
CHEMICALS

B.F.Goodrich Chemical Company
a division of The B.F.Goodrich Company

Products using Carbopol 934 made by Research Laboratories, Inc., St. Joseph, Mo., include a highly palatable nutritional supplement for pigs; preparations for treating upset stomachs of dogs and cats; and other creams, jellies and liniments. B.F.Goodrich Chemical Company supplies the Carbopol 934 only.

B.F.Goodrich

GEON polyvinyl materials • HYCAR American rubber and latex
GOOD-RITE chemicals and plasticizers • HARMON colors

Perfumers Honor Guenther

Dr. Ernest Guenther, vice-president and technical director of Fritzsche Brothers, Inc., New York essential oil and aromatic chemicals firm, will be presented with a bronze plaque, honoring him for his work with essential oils, by the American Society of Perfumers. The presentation will take place at an open dinner meeting of the Society on Oct. 15 at the Advertising Club, New York. Following the presentation of the award, Dr. Guenther will show his film and give a lecture on the production of essential oils in Africa. In addition to his work in developing essential oils, his studies of improved production methods and investigation of new sources of oils, about which he has written widely, Dr. Guenther is the author of the six volume series entitled "The Essential Oils."

—★—

Hooker Appoints Wagner

James B. Wagner has been appointed chemical sales representative in the Baltimore area for Hooker Chemical Corp., Niagara Falls, N. Y., it was announced last month by John S. Coey, vice-president, eastern chemicals sales. Working out of the firm's Philadelphia office, Mr. Wagner's territory includes Maryland, eastern Pennsylvania, and Virginia. He joined Hooker in 1943.

—★—

New Union Carbide Office

Union Carbide Corp., New York, has announced the completion of its new consolidated sales office in Moorestown, N.J. Five divisions of Union Carbide, with sales offices formerly located in Philadelphia, are using the new office as their field headquarters in the Delaware Valley.

—★—

Mears Heads Lan-O-Sheen

William E. Mears was elected president of Lan-O-Sheen, Inc., St. Paul, Minn., manufacturer of household cleaning specialties, at a recent stockholders meeting. He succeeds William Busch, founder of the firm, who becomes chairman of the board.

Also elected were Raymond K. Gooch as vice-president and William B. Ogilvie as secretary-treasurer.

Prior to his recent appointment Mr. Mears was president of Farnham Stationery & School Supply Co.

Controllers Elect Soapers

Dean P. Fite, associate controller of Procter & Gamble Co., Cincinnati, has been elected a director of the Cincinnati Control of the Controller Institute of America, New York, and J. Peter Foster, comptroller and assistant treasurer of Procter & Gamble Co. of Canada, Ltd., Toronto, has been elected a director by the members of the Toronto Control.

Also elected directors of local Controls of the Institute in their respective areas are: R. C. Johnstone, controller, Center Chemical Co., Atlanta; William H. O'Brien, vice-president – finance, Shulton, Inc., Clifton, N. J. (Newark Control); and Leonard S. Zieve, treasurer-controller, The Toni Co. division of Gillette Co., Chicago.

—★—

Croda Moves Offices

Croda, Inc., has recently leased new and larger offices on the 18th floor of the building in which it was previously located at 15 East 26 St., New York City. The Croda organization produces and markets lanolin and related cosmetic, pharmaceutical, and industrial raw materials.

Yardley Elects Officers

Yardley of London (Canada) Ltd., Toronto, has announced the election of P. P. Powell as president, J. C. Sharman as executive vice-president, and E. G. Pearson as a director.

Mr. Powell joined Yardley's London organization in 1923 and has been associated with the Canadian operation since 1934. He was appointed general manager in 1948 and managing director in 1950. Mr. Sharman went with Yardley in 1948 and has been director of sales since 1949. Mr. Pearson joined the firm in London in 1953, came to Canada as plant manager in 1957.

Peter P. Powell

J. C. Sharman

E. G. Pearson

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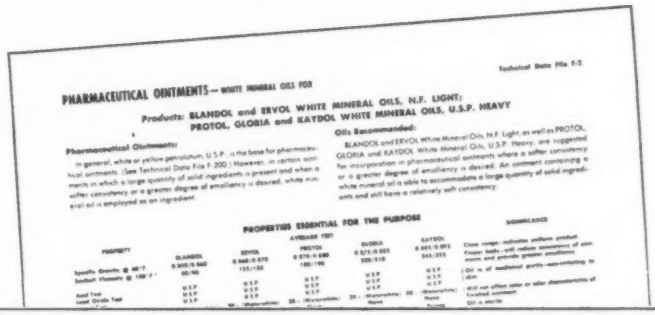

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11. Electrical Industry
12. Food Processing
13. Hair Preparations*
14. Hydraulic Machines
15. Industrial Dust Control
16. Intestinal Lubricants
17. Laundry—Ironer Oil
18. Leather Industry
19. Macaroni Manufacture
20. Meat Packing
21. Mineral Feeds
22. Oil Filled Capacitors
23. Paper Impregnation (Carrier for Polyethylene)
24. Petrochemicals from Ethylene
25. Pharmaceutical Ointments
26. Plastics
27. Plastic Skin
28. Slab Dressing for Confectionery Industry
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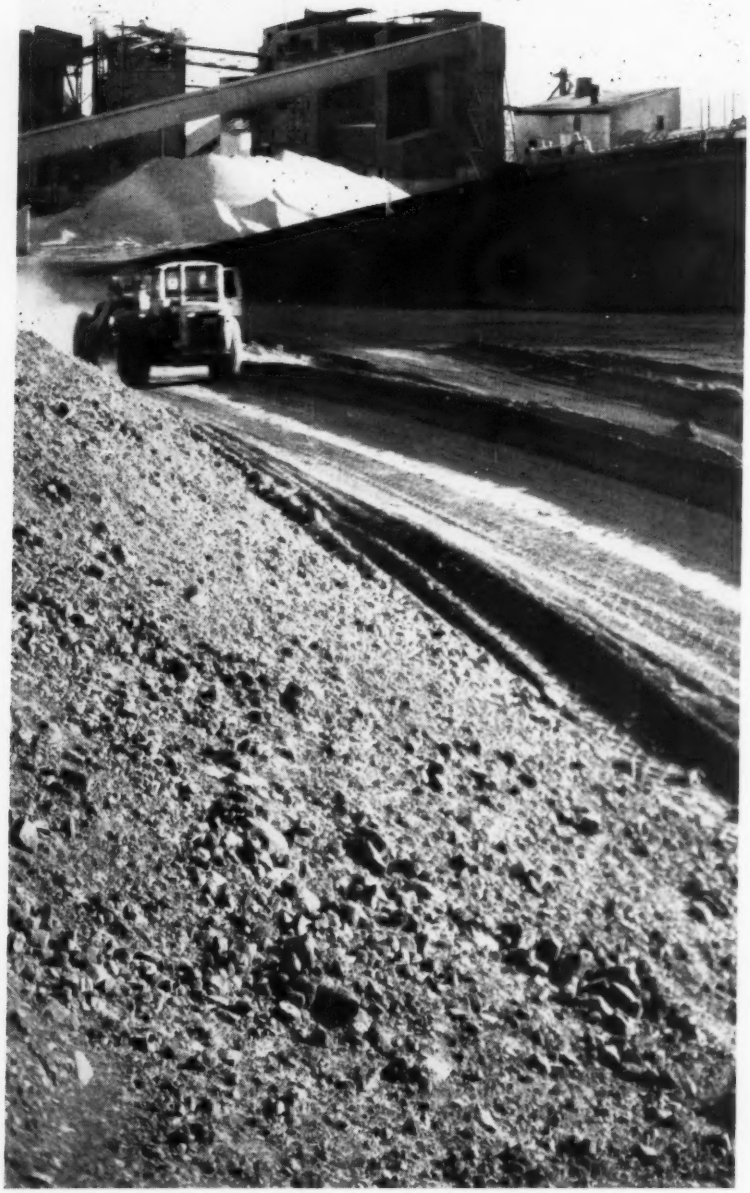

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Record P & G Fiscal Sales, Earnings

PROCTER & Gamble Co., Cincinnati, last month reported record sales and earnings for the fiscal year ending June 30. Consolidated net sales for the firm and its subsidiaries amounted to $1,295,-163,269 compared with sales of $1,156,389,726., last year. This was the third straight year in which sales were above the billion dollar mark.

Consolidated net earnings for the period were $73,196,618 compared with $67,807,376 for the fiscal year ended June 1957. These earnings amounted to $3.56 per common share in 1958 and $3.44 per share in 1957.

In a letter to the company's 59,000 share holders, Richard R. Deupree, chairman of the board, and Howard Morgens, president, pointed out that although the business recession had an effect on the firm's business it was able to move ahead in many different areas. They credited the wide diversification of Procter & Gamble's products as one of the company's strengths in meeting adverse business conditions.

Noting that the company introduced several new products in the last year, the two executives pointed out that about two-thirds of P & G's household business today is in products not in existence 12 years ago. They said continued introduction of new products was essential for the firm to maintain its position in the competitive fields in which it operates.

Also reported was the completion of synthetic detergent plants in Peru and the Philippines bringing to 13 the number of foreign countries in which P & G has manufacturing facilities.

In their letter, Messrs. Deupree and Morgens mentioned the Federal Trade Commission complaint filed against the company for its acquisition of the Clorox Chemical Co. in August, 1957. The acquisition brought the firm into the household bleach and disinfectant field for the first time. In addition to the Clorox suit, the firm faces antitrust proceedings begun in 1952 by the Department of Justice. According to the letter to the shareholders, the executives are confident of their ability to prove that the soap industry has been traditionally highly competitive and that charges of monopoly and restraint of competition are baseless.

—★—

Named by Hollingshead

Keystone Chemical and Supply Co., Scranton, Pa., recently has been appointed sole distributor in the Scranton area of products of the maintenance chemical division of R. M. Hollingshead Corp., Camden, N. J.

According to Emil Laster, Keystone president, the company will represent Hollingshead's full line of products including waxes, detergents, and specialty industiral cleaners.

—★—

Allied Names Miller

Leon W. Miller has been named director of chemical sales for the plastics and coal chemicals division, Allied Chemical Corp., New York, according to a recent announcement by T. J. Kinsella, president of the division.

Mr. Miller has spent his entire career of more than years with the Barrett division of Allied, from which the plastics and coal chemicals division was recently formed.

He joined Barrett as a building products salesman in 1916 in Cleveland. In 1930 he was transferred to New York and became sales manager, specialties department, and shortly thereafter manager of chemical sales.

Leon W. Miller

—★—

Acme Appoints Burns

George D. Burns was recently appointed technical director for the Acme Shellac Co., Woodhaven, N.Y. His new duties will include research on and development of shellac products, technical service, and new products development.

Previously Mr. Burns was section leader in charge of the wax section of Foster D. Snell, Inc.

—★—

New Soap Fragrance

A new straight aromatic chemical for use in soap and detergents was introduced in the July issue of *Dragoco Report*, published by Dragoco, Inc., 250 West Broadway, New York 13. "Centrylate" is suggested for replacement of geranyl acetate, citronellyl acetate and linalyl acetate in compounds and, particularly in soap, where it is said to show good stability. Priced at $2.20 a pound the material is a colorless liquid.

—★—

Lehn & Fink Reports Sales

Sales of Lehn & Fink Products Corp., New York, rose to a record $30,464,000 for the fiscal year ended June 30, compared with $27,321,000 in the same period last year, it was announced last month by Edward Plaut, president.

Earnings, however, decreased to $1,080,000, or $3.26 per share on 331,070 shares, from $1,243,000, or $3.15 a share on 394,350 shares, earned last year. Earnings before taxes were $2,040,000 against $2,-102,000 in 1957.

Dr. Plaut stated sales and earnings for the 1958 fiscal year included those of National Laboratories, Inc., for about nine months.

New Laundry Bacteriostat

A new antimicrobial agent for use in hospital and institutional laundries was introduced recently by Parachlor Chemical Corp., 250 Fifth Ave., New York 1. "Para-Bactol A" is a quatenary ammonium compound claimed to exhibit germicidal, fungicidal, and bacteriostatic activity. The use of one ounce of a 10 per cent solution of "Para-Bactol A" for 10 pounds of wet laundry is said to impart bacteriostatic properties to the laundered materials. Non-corrosive to metals and non-injurious to rubber and plastic, according to the manufacturer, the compound is said to be harmless to the skin if used as directed.

—★—

Frank Drugan Dies

Frank Drugan, head of the receiving department of George Lueders and Co., New York, died suddenly early last month. Mr. Drugan had been with the firm for 39 years.

Marubeni-Iida

OVERSEAS BRANCHES

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Huisking Buys Glyco

Chas. L. Huisking & Co., New York chemical merchants, brokers and importers of basic materials for the pharmaceutical and other specialties industries, acquired the assets of Glyco Products Co., New York, effective Aug. 22. A new corporation, Glyco Chemicals Corp., will be formed and operated as a sales and manufacturing subsidiary of Huisking. Glyco will continue to make its line of synthetic waxes, emulsifiers, "Tetrine" chelating agents and other chemicals and to market its products to industrial consumers. Announcement of the purchase was made by Charles L. Huisking, president of the house which bears his name and which he founded in 1910. The firm operates another manufacturing unit, Clintbrook Chemical Co., Lyndhurst, N. J. which makes fine chemicals.

The newly organized Glyco Chemical Corp. is headed by Charles L. Huisking as chairman of the board and William W. Huisking as president. William Huisking is vice-president of the parent organization. Harry Bennet and Edward Rosendahl, former Glyco president and vice-president, respectively, have retired from the business but are available for consultation. The following Glyco executives continue to serve the new organization: Eugene McCauliff, vice-president in charge of sales and development; W. H. Roberts, vice-president in charge of operations; and M. S. Green, vice-president, finance. Glyco Chemicals Corp. continues to operate at Williamsport, Pa., plant.

—★—

Holtzendorf in New Post

R. L. Holtzendorf has joined Retzloff Chemical Co., Almeda, Tex., it was announced recently by R. W. Todd, vice-president. He will be assigned to technical sales and product development work. He formerly was associated with Monsanto Chemical Co., St. Louis, in various sales capacities. Retzloff makes emulsifiers and chemical specialties.

Nuvite Products Expands

Nuvite Products Co., Brooklyn, N. Y., recently announced an expansion of its facilities to include an increased manufacturing area, larger research laboratories, and modern executive and administrative offices.

The new plant facilities contain an aera of 6,000 square feet of floor space and feature the latest equipment for the manufacture of a full line of chemical specialties including deodorants, disinfectants, floor waxes, cleaners, paint strippers, and related items. In addition, the plant contains equipment for private label filling. Frank Lester is president of the firm.

★

Henderson Heads Section

Hyman S. Henderson has been appointed head of the stored products insect section, biological sciences branch, agricultural marketing service, U. S. Department of Agriculture, Beltsville, Md., replacing Randall Latta who has joined the International Cooperation Administration.

Formerly assistant head of the section, Dr. Henderson will be in charge of research on the development of methods of preventing insect attack on agricultural products during all stages of marketing — including storage, processing or manufacturing, warehousing, retailing, and transportation. Research is directed not only toward preventing the destruction of foods and fibers but also toward preventing the contamination of processed foods by living or dead insects, insect fragments, or insecticidal residue.

★

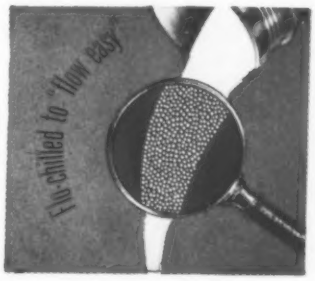
General Mills Names Boyd

The appointment of Thomas H. Boyd as Philadelphia district sales manager for the chemical division of General Mills, Inc., Kankakee, Ill., has been announced by H. T. Von Ochsen, divisional manager of sales. Mr. Boyd will work out of the division's new Philadelphia sales office. Previously he served as an eastern sales representative for the division.

Troubled by lumpy caustic?

It'll pay you to climb on the band wagon for Wyandotte *Flo-chilled** Anhydrous Caustic Soda. It's K.O.'d that old bugaboo of caking and lumping in hot, humid weather—because it's *Flo-chilled* to flow free and easy in your automatic machinery *any* time of the year. Order a supply from your Wyandotte representative or distributor today . . . you'll find it's the same price as ordinary caustic! *TRADEMARK

Look for this label . . . and be SURE!



Wyandotte CHEMICALS
MICHIGAN ALKALI DIVISION
WYANDOTTE CHEMICALS CORPORATION, WYANDOTTE, MICHIGAN
Offices in Principal Cities

PACING PROGRESS WITH CREATIVE CHEMISTRY

Wilson Kite Dies

Wilson J. Kite, Jr., 65, purchasing agent of chemicals and miscellaneous commodities for the plastics and coal chemicals division, Allied Chemical Corp., New York, died suddenly last month.

With the company for 52 years, Mr. Kite served in various plant capacities in Philadelphia until 1922, when he was transferred to New York as a buyer. For the past several years he was purchasing agent for the Barrett division, from which the new plastics and coal chemicals division was recently formed.

—★—

Novel Floor Sprayer

A three and one-half gallon sprayer, mounted on a frame having one or three wheels, for dispensing a wide range of coatings, solvents and cleaners of floors is now being marketed by MacCarl Co., 4342 Pearl Road, Cleveland. The unit, which incorporates "hose pump" in its design and operates without hand or motor pumping, can be used to spray detergents, dust control products, etc.

Designated "Rola Liquid Sprayer," the unit weighs 18 pounds, and has an adjustable nozzle which lays down a pattern from 24 to 60 inches wide. The "hose pump," which actuates the spray was developed and patented by the University of Tennessee, from which MacCarl acquired the rights to promote, used and distribute the idea. The "hose pump" consists of a piece of hose that is squeezed by three lugs attached to the front wheel of the sprayer.

A two-wheel, self-balancing carriage is optional at extra cost. The unit also may be fitted with a spray-wand attachment for use in difficult-to-reach areas or surfaces that cannot be walked on after application of a coating.

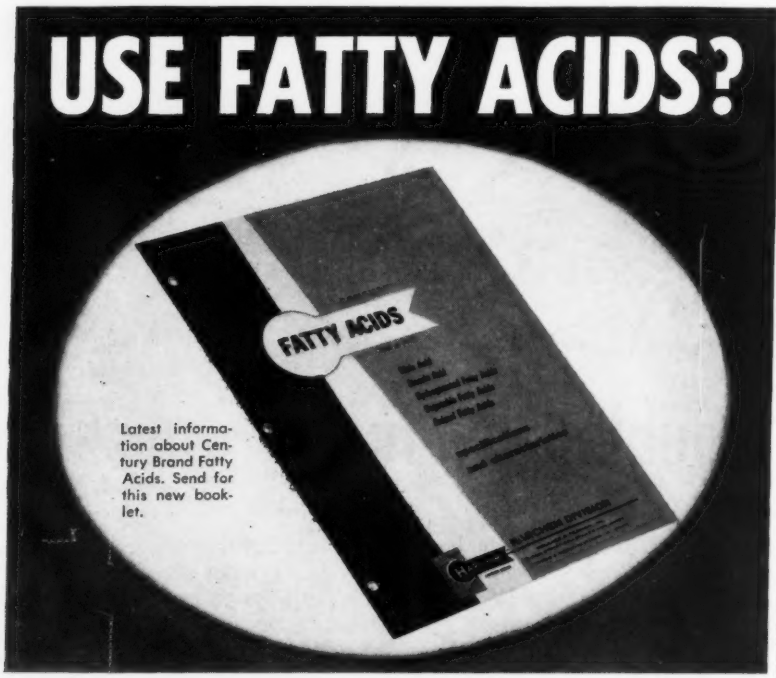
—★—

Names Advertising Agency

Lan-O-Sheen, Inc., St. Paul, has appointed Bozell & Jacobs Inc., Minneapolis, as agency handling all its advertising and marketing, it was announced last month by William Mears, Sr., president. The appointment became effective Sept. 1st.

The company manufactures "Lan-O-Sheen" rug and upholstery cleaner and "Lan-O-Wipe" for cleaning hard surfaces, walls and linoleum. Expansion of the company's sales throughout the midwest area is being planned with the aid of newspaper and television advertising.

USE FATTY ACIDS?



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If you use Fatty Acids you will want Harchem's new publication of specifications and characteristics for their Century Brand Fatty Acids. Harchem gives you the latest data about all grades in their complete line of uniform quality fatty acids. You are the best judge of the type and grade you need. By using this information as a basis for comparison, you can select the fatty acid best suited for your specific use.

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Lanolin Plus/Edell Merge

Stockholders of Lanolin Plus, Inc., Chicago, approved last month purchase of the assets and drug and cosmetic products previously owned by Morton Edell, Newark, N. J. Mr. Edwell was elected president of Lanolin Plus. Edell products covered by the purchase include: "Pink Ice," "Wash 'n Curl," "Tint 'n Set," "Vazol," and "Halogen." Lanolin Plus continues to distribute all of its cosmetic products under its own name, and all proprietary products through its subsidiary, State Pharmacal Co.

—★—

ISM Show to New York

The third annual Industrial & Building Sanitation Maintenance show, originally scheduled to be held in Convention Hall, Philadelphia, has been transferred to the New York Trade Show Building, New York, it was announced recently. The dates of the exposition remain the same, Nov. 3-6, according to Leonard S. Rogers, managing director of the show, which is being produced and managed by Orkin Expositions Management, and sponsored by the Institute of Sanitation Management.

Mr. Rogers attributed the change in location to the preference of ISM members to hold the show in New York as revealed in a survey among them. He also cited the rapid ISM membership growth in the New York area and the fact that convenient dates were available at the Trade Show Building.

Currently with the show, ISM will hold its annual conference program. As in the past two years, the technical sessions are expected to draw building sanitation personnel from the entire country.

The trade show portion of the meeting will, by present indications, be the largest ever in terms of manufacturers' exhibits and amount of floor space occupied by display booths. Some of the firms which have already reserved exhibit space include:

Airkem, Inc., New York; American Sponge & Chamois Co., Long Island City; American Floor Machine Co., Toledo; Associated Just Distributors Division of Fuld Brothers, Inc., Baltimore; C. B. Dolge Chemical Co., Westport, Conn.; Franklin Research Co., Philadelphia; Geerpres Wringer, Inc., Muskegon, Mich.; Huntington Laboratories, Inc., Huntington, Ind.; Scott Paper Co., Chester, Pa.; Vestal, Inc., St. Louis; and Wallace Silversmiths, Inc., Wallingford, Conn.

Cyanamid Elects Perkins

Thomas L. Perkins, a director of American Cyanamid Co., New York, since 1951 was elected chairman of the board of directors at the regular quarterly meeting of the directors last month.

At the same meeting, Gordon Wattles, a director since 1952, was elected chairman of the executive committee, replacing Mr. Perkins, who continues as a member of the committee.

Increased CHLORDANE sales will start here!

Thousands of your dealers will be visiting Velsicol booths at forthcoming trade shows, to learn about the big new 1959 Chlordane promotional program. This extra merchandising effort is one of many ways in which Chlordane will help you increase sales next year. You now have twice the sales opportunities with Chlordane, because it not only kills insects but also controls crabgrass. This double action was first promoted in 1958, and the response was terrific. In addition, the Chlordane dealer program was highly successful in building retail sales. Next year, the Chlordane dealer and consumer campaigns will be more extensive than ever before. Dealers will be given full details at the fall trade shows! Build your 1959 plans around Chlordane, and plan for extra profits!

Visit Velsicol at these shows!

National Hardware Show, Inc.
COLISEUM, New York
Booth 1129-1130
Sept. 29 to Oct. 3, 1958

Garden Supply Trade Show
STATLER HOTEL, New York
Booth 138
Jan. 30-31-Feb 1, 1959

Garden Supply Trade Show 1958
NAVY PIER, Chicago
Booth 510
November 7, 8, 9, 1958

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America's leading household, lawn and garden insecticide

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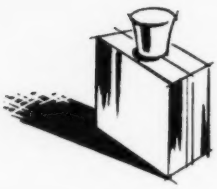
International Representative: Velsicol International Corporation, C.A.
P.O. Box 1687, Nassau, Bahamas, B.W.I.



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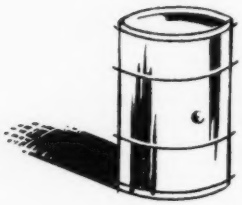
Our laboratories are skilled at developing new fragrances or simulating established ones



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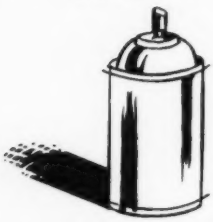
RELY ON FRIES & FRIES

Whether your need is simple or complex, large or small, our laboratories will provide the formulations.



for odors for aerosols

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Sodium, barium and calcium sulfonates with properties to suit your needs—all controlled carefully for exceptional performance.

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Spectrophotometrically-controlled for light stability and purity, these are available in a complete range of U.S.P., N.F. and Technical Grades—with regular or custom properties.

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With high resistance to oxidation, light and heat, these Petrolatums are made exclusively from 100% Pennsylvania Crude. All grades and colors, from Super White to Dark Green.

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2251 Oil—a 100% solvatile, highly purified hydrocarbon distillate. *Super-Sol*—a fast evaporating, highly refined hydrocarbon.

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Let our Technical Service help you with special problems

penn drake products

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U. S. Rust Index

A rust index for 523 United States cities having populations over 10,000 has just been publishd by Rust-Oleum Corp., 2799 Oakton Street, Evanston, Ill., manufacturer of rust preventive coatings. The index lists comparative rates at which rust corrodes a standard, uncoated steel test panel, the size of an auto license plate. A 25-year research program on which the index is based showed variations to result from varying amounts of rainfall, wind, corrosive gases, sunlight, and salt water present in each locality.

Three years, the fastest corrosion rate, applies to Buffalo and Rochester, N. Y.; Erie, Pa.; and Miami, Fla. Slowest rust rate, over 15 years, prevails in Tucson, Ariz.; Roswell and Santa Fe, N.M. In all major industrial centers, 42 percent of the listed cities, the rust rate is under four years; in 60 per cent of the cities under five years.

The nation's rust bill is estimated at above seven and a half billion dollars a year, an increase of two billion dollars over the annual toll estimated 10 years ago.

★

New Johnson Polish

A furniture wax for maintenance use that can be applied in the process of dusting is being marketed by S. C. Johnson & Son, Inc., Racine, Wis. The product is tradenamed "Shine-Up."

It can be sprayed on furniture surfaces directly, or on a dust cloth permitting dusting and waxing in one operation. "Shine-Up" is said to be effective not only on wood but on such surfaces as porcelain, brass, stainless steel, chrome, plastic wall tile, marble, leather, or "Formica."

Sold in gallon containers with a small can equipped with a plunger attachment for spraying, the product is priced at $8. A funnel also is included for transferring the liquid from the large container to the spray can.

★

CSMA vs AMA Label Law

The Chemical Specialties Manufacturers Association recently released copies of a statement made by its general counsel, John D. Conner, before the American Medical Association's committee on toxicity at a meeting held July 25. At this meeting, CSMA was officially represented by Mr. Conner; Robert Morse, legal counsel for Boyle-Midway, Division of American Home Products Corp.; and W. S. Jessop, U. S. Sanitary Specialties Corp.

Mr. Conner stressed the similarity of basic concepts expressed in the model bill evolved by CSMA's precautionary labeling committee and the "Uniform Hazardous Substances Act" proposed by the AMA's committee on toxicology. Primary differences in the two drafts, according to Mr. Conner, are in the broader coverage in the AMA proposal which includes "strong sensitizers," gives a more comprehensive definition of toxic substances and of corrosion substances and includes industrial chemicals in addition to household chemical specialties.

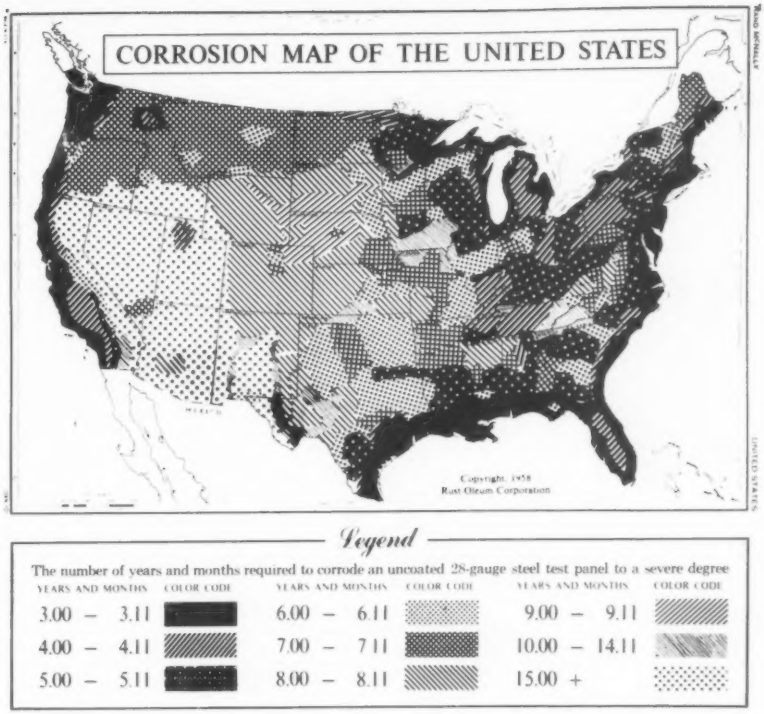
Having discussed each of these points in detail, Mr. Conner requested that the AMA committee move to delete the main points of difference.

★

Soap Assn. Directory

The 1958 membership directory of the Association of American Soap and Glycerine Producers, Inc., New York, has been issued by the association, it was announced last month by J. Malcolm Miller, administrative manager.

Included in the 40-page directory are descriptions of each of the association's activities, its by-laws, and a membership list. The purpose, program, and administration of the association are also discussed.


CORROSION MAP OF THE UNITED STATES
Copyright 1958
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The number of years and months required to corrode an uncoated 28-gauge steel test panel to a severe degree
YEARS AND MONTHS COLOR CODE
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4.00 – 4.11
5.00 – 5.11
6.00 – 6.11
7.00 – 7.11
8.00 – 8.11
9.00 – 9.11
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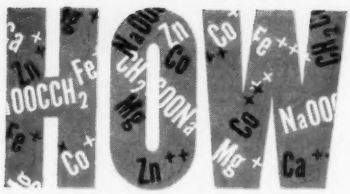
15.00 +



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PLEXENE SPECIAL — with no ferric iron present, one gram chelates 120 mg of $CaCO_3$ at pH 11.

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at pH 9 . . . . . 68 mg
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Hart Offers New Softener

A new softener called "Softyne R" for use in all types of resin finishing of cotton, and rayons requiring high temperature curing or mechanical polishing or embossing operations is available from Hart Products Corp., 1440 Broadway, New York 18, N. Y.

A nonionic softener, the product is said to have extremely high resistance to yellowing at high temperatures. Available as a pure white paste, "Softyne R" is also claimed to produce desirable softness and lubrication, to be completely free of chlorine retention, and to increase the sewability characteristics of treated fabrics.

Samples and technical data sheets may be obtained from the company.

Amphoterics

(*From Page* 58)

pounds containing up to 20 per cent caustic soda can be formulated. I know of no other surfactant of good surface activity in lower caustic concentrations suitable for this purpose. It is stable in solutions of alkali electrolytes up to or beyond the saturation limit, such as 10 per cent sodium tripolyphosphate or 50 per cent sodium metasilicate (45 per cent is a saturated solution at room temperature). Such compounds have shown themselves to be of outstanding quality, especially in the steam cleaning field at costs no higher than conventional powdered products with the advantage of eliminating coil clogging because of improper solution preparation (one of the ever present dangers), absence of corrosion, suitability for steam cleaning of aluminum and cleaned metal parts can be painted before they are completely dry. Household products can be prepared eliminating all or in part the use of expensive potassium salts and avoiding the use of cost-adding but cleaning efficiency lacking hydrotropes.

A further use are medicated shampoos containing quaternary germicides, which pass the Draize Test.

Last but not least, the detergent sulphate and sulfonate salts of this amphoteric, as well as many of its brothers and cousins, provided for the first time shampoo detergents which will not sting or burn eyes and are, furthermore, completely non-irritating and nontoxic.

Some of the other outstanding uses to which other amphoterics have been put are, for instance, Antara's products which are used for acid and alkali wool fulling and washing of carbonized wool without a separate neutralization bath, resin compatible softeners for textiles which do not yellow on high temperature curing; General Mills' products which are used in some cosmetic preparations and Armour's products which are used in emulsion paints to prevent separation or gelling in freeze-thawing cycles.

Germicidal properties which are unaffected or only slightly impaired by protein and starches have been claimed by Goldschmidt. Some investigators also claimed to have found such properties in the "Miranols." However, to date we are still without any confirmation that such properties exist in a relatively pure amphoteric.

The prospects for amphoterics appear very bright. Every month we discover new and different uses and applications. While amphoteric sales today are still rather small compared to other surface active agents, this is in large measure due to the fact that commercial products arrived so late on the scene.

Polymers in Floor Finishes

(*From Page* 81)

action between various components in a finished formulation.

Another area which is currently under investigation is the accurate determination of molecular weight of floor wax polymers.

Associated problems of crosslinking, branching and extraction of polymers from their emulsion systems are to be included in this theoretical study. In all of this work and in subsequent work undertaken by the suppliers in this field it is hoped that the floor wax manufacturer will make known his desires in terms of the type of information which will be of greatest assistance to him. From an improved basic understanding of the composition of a floor finish will certainly come answers to some of the present problems and, in turn, better products.

Shampoo Advances

(From Page 165)

wetting power at the cloud point but solubility can be increased, if desired, by increasing the number of ethoxy groups in the molecule. It is worth noting that the presence of calcium and magnesium salts in solution has been claimed to improve the emulsifying efficiency of polyoxyethylene ethers, which therefore act well in hard water.

Also of interest are the fatty amides, such as lauryl diethanolamide, and the corresponding sulfated amides. These can be advantageously used with soaps and lauryl sulphates.

The type of shampoo prepared in accordance with my research of five years or more ago may be briefly indicated as:

	per cent
Castor-coconut oil soap	5-10
Triethanolamine laurate	5-10
Polyoxyethylene lauryl or myristyl ether	10 to 25
Water, to make	100

Several years later, Thomas Hedley & Co., Ltd. obtained a patent that refers to value of "certain ethers obtainable by the condensation of a higher fatty alcohol with a lower alkylene oxide" as suitable additives to confer mildness on conventional shampoos. In the six formulae quoted in their patent as examples, these ethers appear only in the proportion of one or two per cent, whereas I prefer their employment in proportions of not less than 10 per cent. It is of interest in this connection to note that Savidge and Tyrer, in 1951, suggested a hand cleansing lotion for sensitive skins consisting of 14.5 per cent non-ionic detergent, 5 per cent low titre soap, four per cent isopropyl alcohol, and 76.5 per cent water (16).

Another useful approach to this problem was indicated by Helen Wassel in 1953. Her type of formulation consists essentially of mixed triethanolamine soaps, together with propylene glycol; but she suggests that to this base could be added alkyl polyglycol ethers, ethanolamides and lime soap dispersants (sodium tripolyphosphate or chelating agents of the EDTA type.) Her paper may well be considered in conjuction with the excellent survey given by *Schimmel Briefs* in their review of modern soap shampoos (18).

There is no doubt still plenty of scope for improvement in shampoo formulation, especially in so far as the development of new detergents is concerned and the adequate blending of these and existing detergents within the range of mutual compatibility.

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18. *Schimmel Briefs*, No. 248, November, 1955.

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1852-1911

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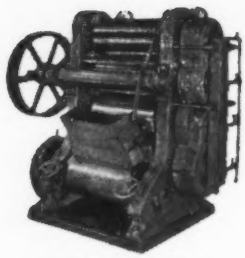

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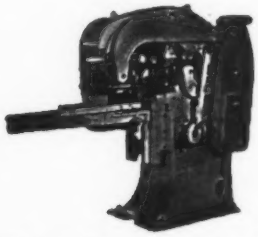

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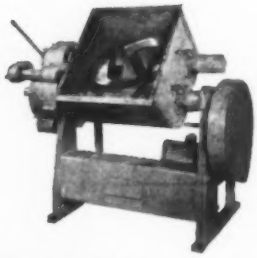

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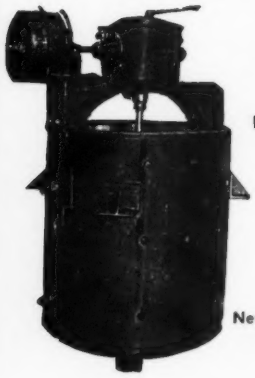

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Harry Heister Dies

Harry W. Heister, 77, a director and senior salesman of George Lueders & Co., New York, died Aug. 17. He had been with the firm for 59 years.

Mr. Heister's father, Henry J. Heister, was one of the original partners of Lueders, having joined the firm in 1893.

★

Joins Columbia-Southern

George W. Sadler has joined Columbia-Southern Chemical Corp., Pittsburgh, as a technical representative for its Boston district sales office.

A graduate of Franklin Technical Institute, Mr. Sadler was assigned to Pittsburgh following completion of an orientation program at the firm's Barberton, O., chemical plant.

Diamond Advances Four

Advancement of four executives of Diamond Alkali Co., Cleveland, was announced last month by Raymond F. Evans, chairman and president.

William H. McConnell has been appointed vice-president in charge of marketing; Henry B. Clark becomes director of sales, a newly-created post; John W. Mantz is general manager of the soda products division; and Samuel S. Savage is general manager of the newly-established international division.

Mr. McConnell formerly was vice-president in charge of sales and has been with the company for 30 years. Prior to his recent appointment, Mr. Clark was general manager of the firm's soda products division, a position he held for more than two of his 24 years with the company. Joining the firm in 1946, Mr. Mantz was general manager of the silicate, detergent, calcium division since its formation in 1954. Mr. Savage was director of export sales for Diamond for the past nine years.

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Pony ML, M, TO; Ermold, World Semi and Automatic Labelers.
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A-D-M Advances Hayward

Robert J. Hayward, Jr., has been advanced to assistant regional sales manager in New York of commodity oils for Archer-Daniels-Midland Co., Minneapolis, it was announced last month by Paul McClay, assistant vice-president and regional sales manager.

Mr. Hayward joined the firm as a commodity oils salesman in the New York office in 1954 with the company's purchase of the resin division of U. S. Industrial Chemicals Co.

—★—

Forum at CMRA Meeting

A "Market Shop" forum session is planned for the French Lick market research conference meeting of the Chemical Market Research Association, New York, to be held Sept. 24th-26th at French Lick, Ind.

The forum will examine the role of market research in the market for nitroparaffins, chelating compounds, chemicals from fats, and the "Polyox" series. Speakers will be Robert E. Bateman, Union Carbide Chemicals; Hoyt M. Corley, Armour and Co.; Frank E. Dolian, Commercial Solvents; and Parker Friselle, Dow Chemical. A panel of experts on these chemicals will also participate in the session.

Other aspects of market research to be discussed at the conference include the application of electronic computers and interviewing techniques.

—★—

Hay Joins MacEachern

The appointment of Gordon D. Hay as executive vice-president and general manager has been announced by Gordon A. MacEachern, president of the Toronto, floor finishing firm bearing his name.

Well known in the floor-finishing and sanitation products industry throughout Canada, Mr. Hay has spent the past 21 years as manager of West Disinfecting Co., Ltd., Toronto. He is a native of Montreal.

Hawes Changes Location

Edward Hawes Co., Ltd., wax manufacturer, has moved to Barber-Greene Rd., Don Mills, Ontario. Previously the firm was located at 431 Dundas St., East, Toronto.

—★—

Cosmetic Chemists' Seminar

The Society of Cosmetic Chemists will hold its fifth annual cosmetic seminar on Oct. 8 and 9 at the Barbizon Plaza Hotel, New York. Edward Sagarin of Embassy Laboratories, New York, is scheduled to moderate the afternoon session on Oct. 8, which will deal with "Significance of Consumer Testing to Research."

Members and guests may register through SCC's headquarters at the New York Academy of Sciences, 2 East 63rd Street, New York 21. Registration fee for members is $20.00, for guests $25.00. This covers technical sessions, luncheon, cocktails and dinner on Oct. 8 and luncheon on Oct. 9.

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Kamen Plant Flooded

Heavy rains recently flooded the plant of Kamen Soap Products Co., Barberton, O., causing the firm to suspend its operations until equipment could be repaired.

Water reportedly reached heights of more than two feet in some areas of the plant.

—★—

New Johnson Cleaner

A heavy-duty cleaner said to disinfect, deodorize and clean in one operation has been introduced by S. C. Johnson & Son, Inc., Racine, Wis., under the tradename "Blue Chip."

The product utilizes a quaternary ammonium compound for bacterial control and a detergent for cleaning action. An outstanding feature of the cleaner, according to the company, is its usefulness as a deodorizer which gets rid of odor-causing bacteria instead of masking the odor.

Further attributes claimed for the cleaner are that it removes all types of grit, grease, and soap scum quickly and safely, can be mixed with either hot or cold water, hard or soft, is mild to hands, and cleans and disinfects the surface of was film without affecting the film itself.

"Blue Chip" is mixed one part to 20 parts of water as a cleaner-germicide. It will be sold in one-gallon glass jugs at $3.90 per gallon.

Hooker Elects Officers

Directors of Hooker Chemicals, Ltd., North Vancouver, British Columbia, have elected Thomas E. Moffitt as president, F. Leonard Bryant and Horace W. Hooker, Jr., as vice-presidents, Thomas F. Willers as treasurer, and Ansley Wilcox 2nd, as secreary, it was announced last month by Hooker Chemical Corp., Niagara Falls, N. Y.

Mr. Bryant and H. W. Hooker, Jr., were elected to the board of directors by an earlier stockholder vote. Other members of the board include: Mr. Moffitt, R. Lindley Murray, R. Wolcott Hooker, Robert E. Wilkin, Mr. Wilcox, and Robert A. C. Douglas. All, except Mr. Douglas, have positions with the parent United States firm in Niagara Falls.

Mr. Moffitt succeeds Mr. Murray as president of the Canadian firm. Mr. Murray is chairman of the board and Mr. Moffit is president of Hooker Chemical Corp.

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Coming Meetings

American Chemical Society, national meeting, Chicago, Sept. 7-12.

American Oil Chemists Society, fall meeting, Sherman Hotel, Chicago, Oct. 20-22; 50th anniversary spring meeting, Roosevelt Hotel, New Orleans, April 20-22, 1959.

Association of American Soap & Glycerine Producers, 32nd annual convention. Waldorf-Astoria Hotel, New York, Jan. 20, 21 and 22, 1959.

Canadian Chemical Specialties Manufacturers, first annual meeting, Queen Elizabeth Hotel, Montreal, P. Q., Nov. 13-14.

Chemical Specialties Manufacturers Association, 45th annual meeting, Commodore Hotel, New York, Dec. 8-10; 45th midyear meeting, Drake Hotel, Chicago, May 18-20, 1959.

Entomological Society of America, sixth annual meeting, Hotel Utah, Salt Lake City, Dec. 1-4.

Industrial and Building Sanitation Maintenance, third show and conference, New York Trade Show Building, Nov. 3-6, 1958.

National Agricultural Chemicals Association, annual meeting, Bon Air Hotel, Augusta, Ga., Oct. 29-31.

National Hotel Exposition, Coliseum, New York, Nov. 3-7.

National Packaging Show of American Management Association, International Amphitheater, Chicago, April 13-16; packaging conference, Palmer House, Chicago, April 13-15.

National Pest Control Association, 25th annual convention, Hotel Statler, Washington, D. C., Oct. 20-23.

National Sanitary Supply Association, industry management seminar and trade show, Fairmont Hotel, San Francisco, Oct. 19-21, 1958; 36th annual convention and trade show, Conrad Hilton Hotel, Chicago, April 12-15, 1959.

Salesmen's Association of American Chemical Industry, golf outing, Sept. 18. Sales clinic, Roosevelt Hotel, New York, Oct. 20.

Society of Cosmetic Chemists, seminar, Barbizon Plaza Hotel, New York, Oct. 8-9; annual meeting, Statler Hotel, New York, Nov. 20.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon, Roosevelt Hotel, New York, Sept. 9.

Toilet Goods Association, 24th annual convention, Waldorf Astoria Hotel, New York, May 12-14, 1959.

Western Packaging & Materials Handling Exposition, Civic Auditorium, San Francisco, Aug. 11, 12 & 13.

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Tale Ends

JIM WHEELER, prez of Essential Chemicals of Milwaukee has dug up a new use for soap. It seems that a Milwaukee motorist far from home on a trip through Grand Teton National Park punctured his gas tank on a sharp stone. Fearful of a long delay if the tank had to be welded, he tried plugging the gash with soap softened with water using it like a cement. Two thousand miles later, he soap plug was still holding. Accordingly, Jim holds that every motor car should carry at least one bar of soap in the repair kit.

* * *

Nils Dahl, general manager of John T. Stanley Co., New York, and perennial and very popular treasurer of the Soap Association is back on the job at his office after a double stretch in the hospital. First he was in St. Vincent's in New York and then in Victor Memorial. He says that he is fast regaining his strength and will soon be as full of pep as ever.

* * *

Calling all rattors! The big main post office in New York City has problems. When one of our staff stopped by to pick up a couple of forms at the post office recently a clerk pulled open a drawer and out popped a plump rat. Were Uncle Sam's men daunted? Not at all. Instead of dashing off to get a window pole, machete or fire ax, these animal lovers scoured the joint for a camera. They shot a picture of the rodent, too. But as luck would have it the camera wasn't loaded. When last seen the rat was headed for Penn Station's Union News Company's lower level lunch room (our company mess hall) for a quick snort.

* * *

Willie Waxheart Rides Again! This time Willie (alias Maurycy Bloch, the man in prepetual motion from Warwick Wax Co.) has just announced the signing of a new distributor in our newest state, Alaska. We always thought Willie was pretty quick on the draw,—this proves it. In case your're interested, the phone number of Warwick's new distributor (Don Chemical Co. in Anchorage) is Anchorage 42464. Warwick's New York phone number appropriately enough is Yukon 6-5500.

* * *

For 20 years, she had entered all sorts of contest without winning a thin dime. Then she hit the jackpot! Mrs. Gilbert Walton of Vancouver, Wash. recently won the grand prize of $25,000 in Armour's "Dial" Soap Oil Well Contest, the first prize she had ever won in her life. She had her choice of a producing oil well worth up to $35,000 or $25,000 in cash. She took the cash. Over 1,500 others also won prizes in the Armour "Dial" jingle contest.

* * *

An aerosol supermarket will be the theme of the 10th anniversary celebration of the marketing of household pressure packages. Everything from insecticides to perfumes to shave cream will be displayed at an exhibit and give away show for some 50 editors of women's and trade magazines which will be held by the Aerosol Division of CSMA in connection with the annual CSMA meeting in December at the Commodore Hotel in N. Y. Free cocktails will also be served the editors. This latter is certain to insure a large attendance.

* * *

Maintenance Products Department salesmen of S. C. Johnson at their meeting in Racine last month got quite a chuckle out of the two stories Sam Johnson, son of the firm's board chairman, and head of the department, told about himself at the meeting. When he was first on the job, Sam recalls, some of the men at the company showed him a magazine cartoon of a young man in a factory being introduced to another by a third man who is saying: "This is the boss' son, Joe, he's going to work his way up from the bottom for a few days." Another josher told Sam: "It's easy to work your way up the ladder of success when your old man owns the ladder."

* * *

Industrial and home weed control products are on the boom, we hear. Uses are expanding and new things are being offered. The latest weed product to come on the market, according to "Scan", the leaflet issued by Shell Chemical, New York, is a two-foot long wax bar in which is incorporated a weed killing chemical. This bar is dragged across the lawn or other weeds and deposits a thin film of wax which cannot be washed off or blown away. One bar will treat 20,000 square feet of weedy area. It works on dandelions and all broad leaf growth.

* * *

Got car trouble? Page Les Berger, product manager of water soluble chemicals for Union Carbide Chemical Co. Les is an auto bug, who knows more than most about cars, we are told. Just recently in North Carolina a group of Carbide lads were driving a car which developed radiator trouble. When a garage mechanic couldn't figure out what was wrong Les stepped up and analyzed the trouble in nothing flat.

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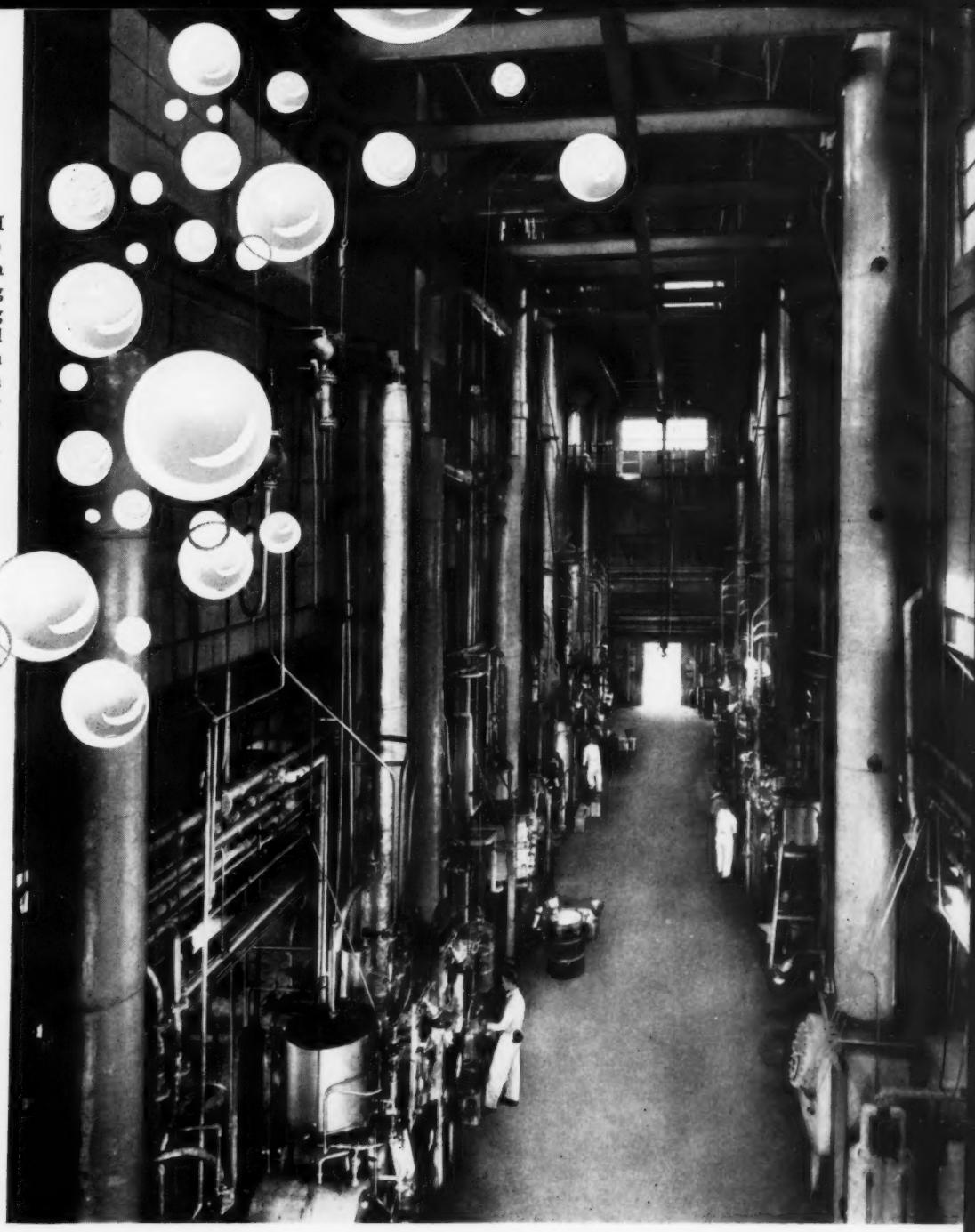

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